

KENWOOD

UD COMPONENT SYSTEM / COMPACT HI-FI SYSTEM

UD-301

INSTRUCTION MANUAL

KENWOOD CORPORATION



Introduction

Your choice of this product indicates that you are a devotee to excellence in sound reproduction.

We appreciate your patronage and take pride in the long tradition of quality components that our company represents.

So that you can get the most out of your unit, we suggest that you take the time to read through this manual before you hook up and operate your system. This will acquaint you with operating features and system-connection considerations so that your listening pleasure will be enhanced right from the start. You will notice that in all aspects of planning, engineering, styling, operating convenience and adaptability we have sought to anticipate your needs and desires.

Keep this manual handy for future reference.

For your records

Record the serial number, found on the back of the unit, in the spaces designated on the warranty card, and in the space provided below. Refer to the model and serial numbers whenever you call upon your dealer for information or service on this product.

Model _____ Serial Number _____

Unpacking

Unpack the unit carefully and make sure that all accessories are put aside so they will not be lost.

Examine the unit for any possibility of shipping damage. If your unit is damaged or fails to operate, notify your dealer immediately. If your unit was shipped to you directly, notify the shipping company without delay. Only the consignee (the person or company receiving the unit) can file a claim against the carrier for shipping damage.

We recommend that you retain the original carton and packing materials for use should you transport or ship the unit in the future.

The marking of products using lasers (Except for some areas.)

**CLASS 1
LASER PRODUCT**

This label is attached to the rear panel and says that the component uses laser beams that have been classified as Class 1. It means that the unit is utilizing laser beams that are of a weaker class. There is no danger of hazardous radiation outside the unit.

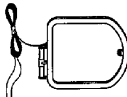
WARNING NOTICE:

IN MOST CASES IT IS AN INFRINGEMENT OF COPYRIGHT TO MAKE COPIES OF TAPES OR DISCS WITHOUT THE PERMISSION OF THE COPYRIGHT OWNERS. ANYONE WISHING TO COPY COMMERCIALY AVAILABLE TAPES OR DISCS SHOULD CONTACT THE MECHANICAL COPYRIGHT PROTECTION SOCIETY LIMITED OR THE PERFORMING RIGHTS SOCIETY LIMITED.

When your unit needs to be repaired, bring the entire set (Speakers excluded) to your dealer.

Accessories

- AM loop antenna 1
- FM indoor antenna 1



- Loop antenna stand 1
- Antenna adaptor (75Ω / 300Ω) 1
(For U.K. and Europe)



- Batteries(R03 / AAA) 2
- Remote control unit 1



- AC plug adaptor 1
(Except for some areas)
- Speaker cords Red / Black 2



For the unit with a European AC plug in areas other than Europe.

Speaker cords are packed with the speakers. All other accessories are packed with the CD player/Cassette deck unit.

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Caution: Read the pages marked carefully to ensure safe operation.

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Before applying power

 **Caution:** Read this page carefully to ensure safe operation.

For the U.S.A. and Canada

Important!

Units shipped to the U.S.A. and Canada are designed for operation on 120 volts AC only.

CAUTION: TO PREVENT ELECTRIC SHOCK DO NOT USE THE AC PLUG WITH AN EXTENSION CORD, RECEPTACLE OR OTHER OUTLET UNLESS THE BLADES CAN BE FULLY INSERTED TO PREVENT BLADE EXPOSURE.

For Australia and Europe

Important!

Units shipped to Australia are designed for operation on 240 V AC only.

Units shipped to Europe are designed for operation on 230 V AC only.

For the United Kingdom

Important!

Units shipped to the U.K. are designed for operation on 240 volts AC only.

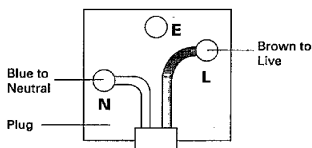
The mains plug must be removed from the wall socket prior to any internal examination.

The wires in this mains lead are coloured in accordance with the following code:

Blue Neutral
Brown Live

The wires in this mains lead must be connected to the terminals in the plug as follows:

Wire colour	Plug terminal marking
Blue	N or Black
Brown	L or Red



Notes:

1. If a 13-amp plug is used, this must be fitted with a 13-amp fuse.
2. If a 3-pin plug with earthing contact is used, no wire must be connected to the E terminal.

For other countries

Important!

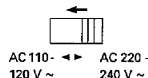
Units shipped to countries other than the above countries are equipped with an AC voltage selector switch on the rear panel. Refer to the following paragraph for the proper setting of this switch.

AC voltage selection

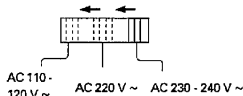
This unit operates on 110 - 120 or 220 - 240 volts AC. The AC voltage selector switch Type A or Type B on the rear panel is set to the voltage that prevails in the area to which the unit is shipped. Before connecting the power cord to your AC outlet, make sure that the setting position of this switch matches your line voltage. If not, it must be set to your voltage in accordance with the following direction.

AC voltage selector switch

Type A



Type B



Move switch lever to match your line voltage with a small screwdriver or other pointed tool.

Note:

Our warranty does not cover damage caused by excessive line voltage due to improper setting of the AC voltage selector switch.

Safety precautions

WARNING: TO PREVENT FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.



CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN



CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER-SERVICEABLE PARTS INSIDE, REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.



THE LIGHTNING FLASH WITH ARROWHEAD SYMBOL, WITHIN AN EQUILATERAL TRIANGLE, IS INTENDED TO ALERT THE USER TO THE PRESENCE OF UNINSULATED "DANGEROUS VOLTAGE" WITHIN THE PRODUCT'S ENCLOSURE THAT MAY BE OF SUFFICIENT MAGNITUDE TO CONSTITUTE A RISK OF ELECTRIC SHOCK TO PERSONS.



THE EXCLAMATION POINT WITHIN AN EQUILATERAL TRIANGLE IS INTENDED TO ALERT THE USER TO THE PRESENCE OF IMPORTANT OPERATING AND MAINTENANCE (SERVICING) INSTRUCTIONS IN THE LITERATURE ACCOMPANYING THE APPLIANCE.

IMPORTANT SAFEGUARDS



Caution: Read this page carefully to ensure safe operation.

Please read all of the safety and operating instructions before operating this unit. For best results, follow all warnings placed on the unit and adhere to the operating and use instructions. These safety and operating instructions should be retained for future reference.

1. Power sources – The unit should be connected to a power supply only of the type described in the operating instructions or as marked on the appliance.

2. Power-cord protection – Power-supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, pay particular attention to cords at plugs, convenience receptacles, and the point where they exit from the unit.

Never pull or stretch the cord.

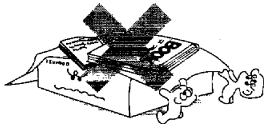


3. Grounding or polarization – The precautions should be taken so that the grounding or polarization means of this unit is not defeated.

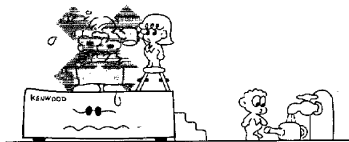
4. Ventilation – The unit should be situated so that its location or position does not interfere with its proper ventilation.

To maintain good ventilation, do not put records or a table-cloth on the unit. Place the unit at least 10 cm away from the walls.

Do not use the unit on a bed, sofa, rug or similar surface that may block the ventilation openings.



5. Water and moisture – The unit should not be used near water - for example, near a bathtub, washbowl, kitchen sink, laundry tub, in a wet basement, or near a swimming pool, etc.

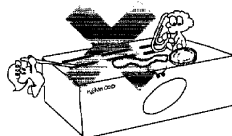


6. Temperature – The unit may not function properly if used at extremely low, or freezing temperatures. The ideal ambient temperature is above +5°C (41°F).

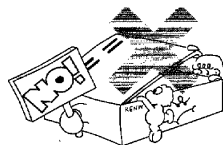
7. Heat – The unit should be situated away from heat sources such as radiators, heat registers, stoves, or other units (including amplifiers) that produce heat.



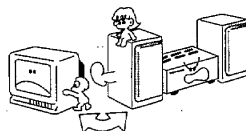
8. Electric shock – Care should be taken so that objects do not fall and liquid is not spilled into the enclosure through openings. If a metal object, such as a hair pin or a needle, comes into contact with the inside of this unit, a dangerous electric shock may result. For families with children, never permit children to put anything, especially metal, inside this unit.



9. Enclosure removal – Never remove the enclosure. If the internal parts are touched accidentally, a serious electric shock might occur.



10. Magnetic fields – Keep the unit away from sources of magnetic fields such as TV sets, speaker systems, radios, motorized toys or magnetized objects.



11. Cleaning – Do not use volatile solvents such as alcohol, paint thinner, gasoline, or benzene, etc. to clean the cabinet. Use a clean dry cloth.



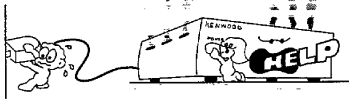
- 12. Carts and stands** – An appliance and cart combination should be moved with care. Quick stops, excessive force, and uneven surfaces may cause the appliance and cart combination to overturn.



- 13. Nonuse periods** – The power cord of the unit should be unplugged from the outlet when left unused for a long period of time.

- 14. Abnormal smell** – If an abnormal smell or smoke is detected, immediately turn the power OFF and pull out the power cord. Contact your dealer or nearest service center.

POWER OFF!



- 15. Damage requiring service** – The unit should be serviced by qualified service personnel when:

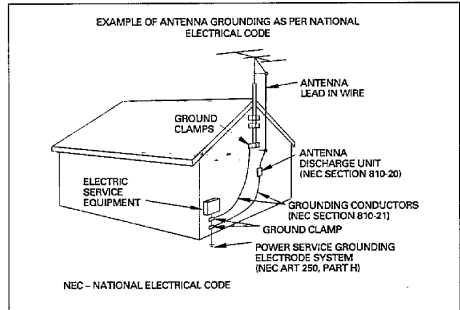
- A.** The power-supply cord or the plug has been damaged; or
- B.** Objects have fallen, or liquid has been spilled into the unit; or
- C.** The unit has been exposed to rain; or
- D.** The unit does not appear to operate normally or exhibits a marked change in performance; or
- E.** The unit has been dropped, or the enclosure damaged.

- 16. Servicing** – The user should not attempt to service the unit beyond that described in the operating instructions. All other servicing should be referred to qualified service personnel.

Notes:

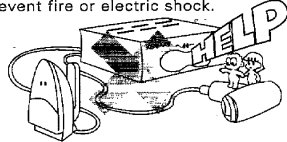
- 1. Item 3 is not required except for grounded or polarized equipment.
- 2. Item 17 and 18 are not required except for units provided with antenna terminals.
- 3. Item 17 complies with UL in the U.S.A.

- 17. Outdoor antenna grounding** – If an outside antenna is connected to the receiver, be sure the antenna system is grounded so as to provide some protection against voltage surges and built up static charges. Section 810 of the National Electrical Code, ANSI/NFPA 70, provides information with respect to proper grounding of the mast and supporting structure, grounding of the lead-in wire to an antenna discharge unit, size of grounding conductors, location of antenna-discharge unit, connection to grounding electrodes, and requirements for the grounding electrode. See Figure.



- 18. Power lines** – An outdoor antenna should be located away from power lines.

- 19. AC outlets** – Do not connect other audio equipment with a power consumption larger than that specified to the AC outlet on the rear panel. Never connect other electrical units, such as an iron or toaster, to it to prevent fire or electric shock.



For the U.S.A.

CAUTION:

Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

In compliance with Federal Regulations, following are reproductions of labels on, or inside the product relating to laser product safety.

**KENWOOD CORPORATION
SHIONOGI SHIBUYA BUILDING 17-5
2-CHOME, SHIBUYA, SHIBUYA-KU,
TOKYO, JAPAN**

**KENWOOD CORP. CERTIFIES THIS EQUIPMENT
CONFORMS TO DHHS REGULATIONS NO. 21 CFR
1040.10, CHAPTER I, SUBCHAPTER J.**

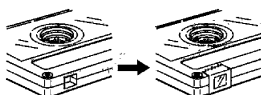
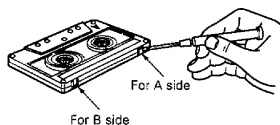
Location: Back Panel

Before operation

Notes on cassette tape

Safety tab (accidental erasure prevention tab)

After an important recording has been finished, break the safety tab, to prevent the recorded contents from being erased or recorded on accidentally.

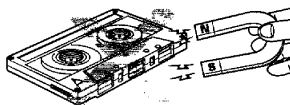


To re-record

Apply tape only to the position where the tab has been removed.

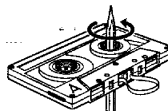
To store cassette tapes

Do not store the tapes in a place which is subject to direct sunlight, or near equipment that generates heat. Keep the cassette tapes away from any magnetic field.



When there is slack in the tape

In such a case, insert a pencil into the reel hole and wind the reel hub to remove the slack.



Notes:

1. 120-minute cassette tape

Since a 120-minute cassette tape is very thin, the tape could adhere to the pinch roller or be easily cut. It is recommended that these tapes not be used with this unit to prevent possible damage.

2. Endless tapes

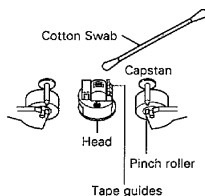
Do not use an endless tape, as this could damage the mechanism of the unit.

Cleaning the head section

Cleaning the heads and peripheral components

For maintaining the best condition of the deck and for longer service life, always keep the heads (recording / playback / erase), capstan and pinch roller clean. To clean them, perform the following:

1. Open the cassette holder.
2. Using a cotton swab dipped in alcohol, clean the head (recording / playback / erase), capstan and pinch roller carefully.



Demagnetizing the head

When the recording / playback head is magnetized, the sound quality will be deteriorated. In such a case, demagnetize the head using a commercially available demagnetizer (head eraser).

Note:

There are precisely aligned parts around the heads, including the tape guides. When cleaning, pay special attention so as not to apply shock to them.

Beware of condensation

When water vapor comes into contact with the surface of cold material, water drops are produced.

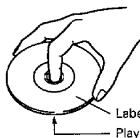
If condensation occurs, correct operation may not be possible, or the unit may not function correctly.

This is not a malfunction, however, and the unit should be dried. (To do this, turn the POWER switch ON and leave the unit as it is for several hours.)

Be especially careful in the following conditions:

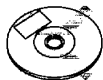
- When the unit is brought from a cold place to a warm place, and there is a large temperature difference.
- When a heater starts operating.
- When the unit is brought from an air-conditioned place to a place of high temperature with high humidity.
- When there is a large difference between the internal temperature of the unit and the ambient temperature, or in conditions where condensation occurs easily.

Disc handling precautions



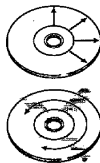
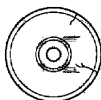
Handling

Hold compact discs so that you do not touch the playing surface.



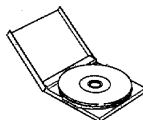
Do not attach paper or tape to either the playing side or the label side of compact discs.

Caution on disc used



Cleaning

If fingerprints or foreign matter become attached to the disc, lightly wipe the disc with a soft cotton cloth (or similar) from the center of the disc outwards in a radial manner.



Storage

When a disc is not to be played for a long period of time, remove it from the CD player and store it in its case.

Never play cracked or warped disc.

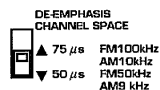
During playback, the disc rotates at high speed in the player. Therefore, to avoid danger, never use a cracked or deformed disc or a disc repaired with tape or adhesive agent.

FM DE-EMPHASIS / CHANNEL SPACE switch (Except for some areas)

The FM DE-EMPHASIS / CHANNEL SPACE switch on the rear panel is set to the correct setting that prevails in the area to which the unit is shipped. However, if the FM DE-EMPHASIS / CHANNEL SPACE setting is not matched to the area where the unit is to be used; for instance, when you move from area 1 to area 2 or vice versa, desired reception of AM / FM broadcasts is not expected. In this case, change the FM DE-EMPHASIS / CHANNEL SPACE setting in accordance with the area corresponding to the table. The FM DE-EMPHASIS is switched over at the same time.

- When changing the setting of the FM DE-EMPHASIS / CHANNEL SPACE switch, first disconnect the power cord, then reset the channel space switch, connect the power cord again, and turn the power on.

Area	CHANNEL SPACE freq.	FM DE-EMPHASIS
1 U.S.A., Canada, and South American countries	FM: 100kHz AM: 10kHz	75μs
2 Other countries	FM: 50kHz AM: 9kHz	50μs



Dolby noise reduction manufactured under license from Dolby Laboratories Licensing Corporation.
"DOLBY" and the double-D symbol  are trademarks of Dolby Laboratories Licensing Corporation.

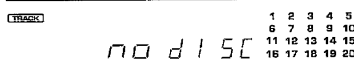
Memory backup function

Stored contents cleared at least 3 days after the last power OFF (STAND BY mode)	Cassette deck (Direction and recording level)
Stored contents cleared immediately when power plug in unplugged from power outlet	Clock of tuner
Stored contents cleared in at least 3 days after power plug is unplugged from power outlet	Graphic equalizer (Stored patterns) Preset stations of tuner

Note related to transportation and movement (CD player)

Before transporting or moving this unit, carry out the following operations.

- Turn the power ON but do not load a disc.
- Wait a few seconds and verify that the display shown appears.

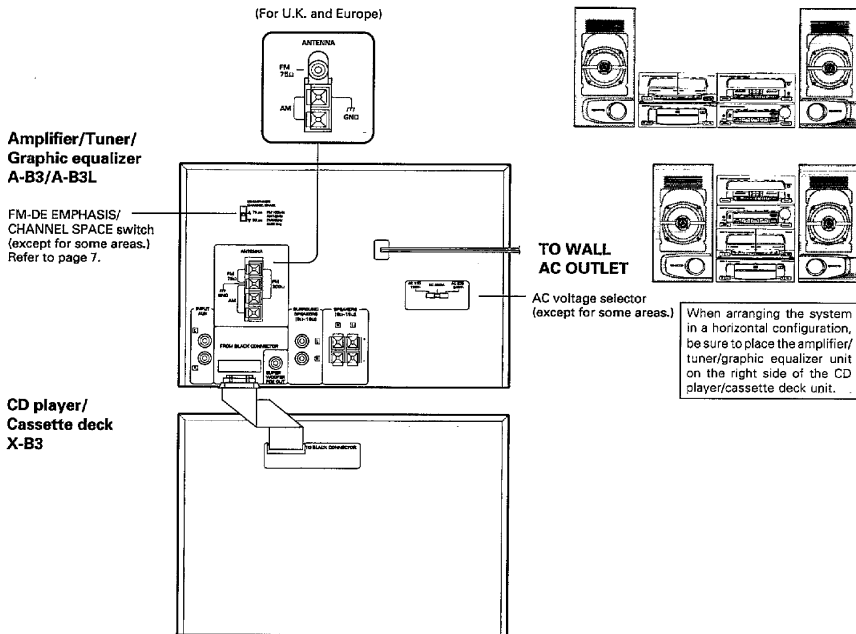


- Turn the power OFF.

System connections

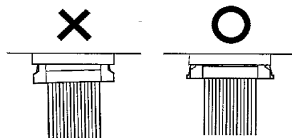
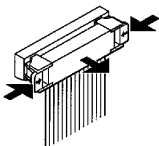
Do not plug in the power cord until all connections are completed.

- When stacking components, follow the indicated order in the connections diagram.
- When connecting the parallel cord, be sure to match the colors of the sockets.
- When connecting the related system components, refer also to the instruction manuals of the related components.



■ Connection of parallel cord

- Hold the connector of the parallel cord in parallel with the socket on the rear panel, and insert securely until it clicks.
- Connect the parallel cord by matching the colors of the connector and socket.
- When unplugging the parallel cord, push and hold the two ends of the connector and pull the connector straight from the rear panel socket.



Notes:

1. Connect all cords firmly. If connections are loose, there could be loss of sound or noise produced.
2. When plugging and unplugging connection cords, be sure to first remove the power cord from the AC outlet. Plugging / unplugging connection cords without removal of the power cord can cause malfunctions or damage to the unit.

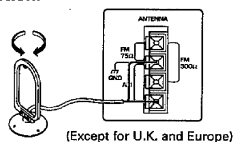
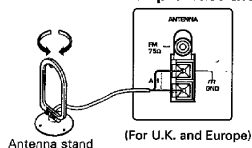
Connection method to each antenna terminal

- ① Push lever.
- ② Insert cord.
- ③ Return lever.



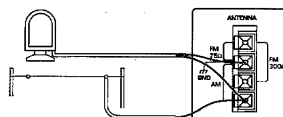
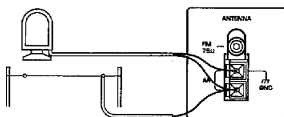
AM loop antenna connection

The supplied antenna is for indoor use. Place it as far as possible from the main system, TV set, speaker cords and power cord, and set it to a direction which provides the best reception.



AM outdoor antenna connection

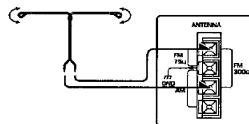
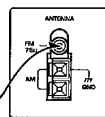
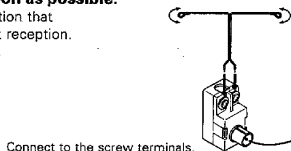
If the reception is poor when the AM loop antenna is used, distribute a vinyl-coated wire of more than 6 meters outdoors, without disconnecting the loop antenna.



FM indoor antenna connection

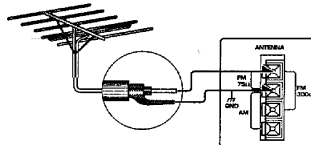
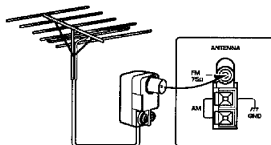
The supplied antenna is for indoor use. For stable reception, remove the indoor antenna after installing an outdoor antenna as soon as possible.

- ① Find the position that provides best reception.
- ② Fix two ends.



FM outdoor antenna connection

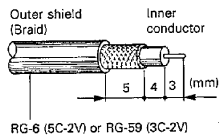
It is recommended to install an exclusive FM outdoor antenna to capture FM broadcast with high sound quality. Use a coaxial cable for the connection between the outdoor antenna and FM ANTENNA terminal on the rear panel. For the connection between the coaxial cable and FM ANTENNA terminal, please refer to the illustration.



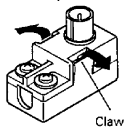
System connections

■ 75 Ω coaxial cable connection (For U.K. and Europe)

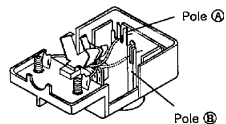
- ① Arrange the coaxial cable as illustrated.



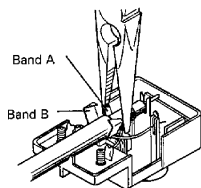
- ② Open the antenna adaptor. Open the claws with the fingers to release the lock and pull out the cover.



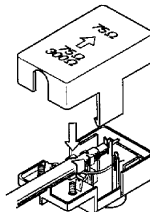
- ③ Remove the inner conductor from the groove of pole ④ and insert it in the groove of pole ⑤.



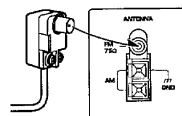
- ④ Insert into the slit on the clip. Fasten the bends A and B, using a pair of pliers.



- ⑤ Close the cover.



- ⑥ Connect the adaptor to the antenna terminal.



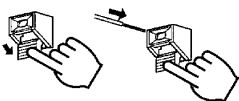
Note:

When using a 300 Ω feeder cable, insert its cores into the groove of pole ④.

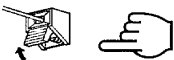
■ Connection of front speakers

On the speaker:

- ① While pressing lever
- ② Insert cord. (holding it)



- ③ Release lever, ...

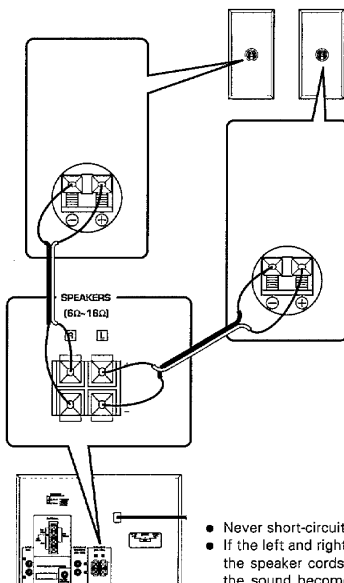


On the amplifier:

- ① Push lever.
- ② Insert cord.



- ③ Return lever.

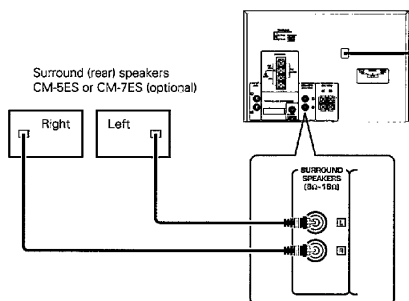


- Never short-circuit the + and - speaker cords.
- If the left and right speakers are connected inversely or if the speaker cords are connected with reversed polarity, the sound becomes unnatural with ambiguous acoustic image positioning. Be sure to connect the speakers and speaker cords correctly.

■ Connection of surround (rear) speakers

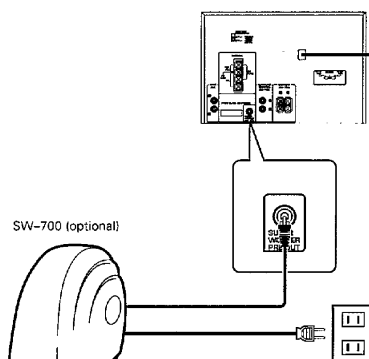
Except for U.K., Europe, U.S.A. and Canada

Surround (rear) speakers
CM-5ES or CM-7ES (optional)



- Be sure to connect both surround speakers. If only one surround speaker is connected, surround cannot be heard.

■ Connection of super woofer

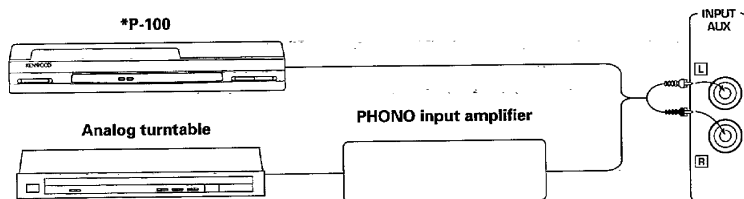


■ AUX jacks

The AUX jacks of the amplifier/tuner/graphic equalizer unit accept the connection of an LD player, DBS tuner, etc.

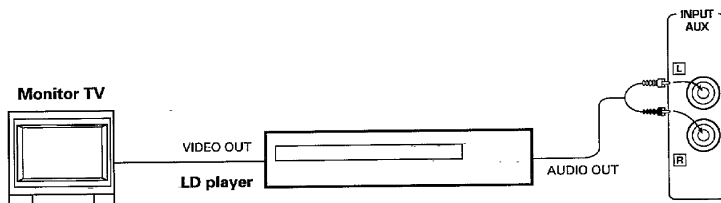
It is also possible to connect the KENWOOD P-100 analog turntable* to these jacks. (When an analog turntable from other manufacturer is connected, it should be connected by means of a special preamplifier for the PHONO input.) Also read carefully the instruction manual of the component connected to these jacks.

Example: Connection of an analog turntable



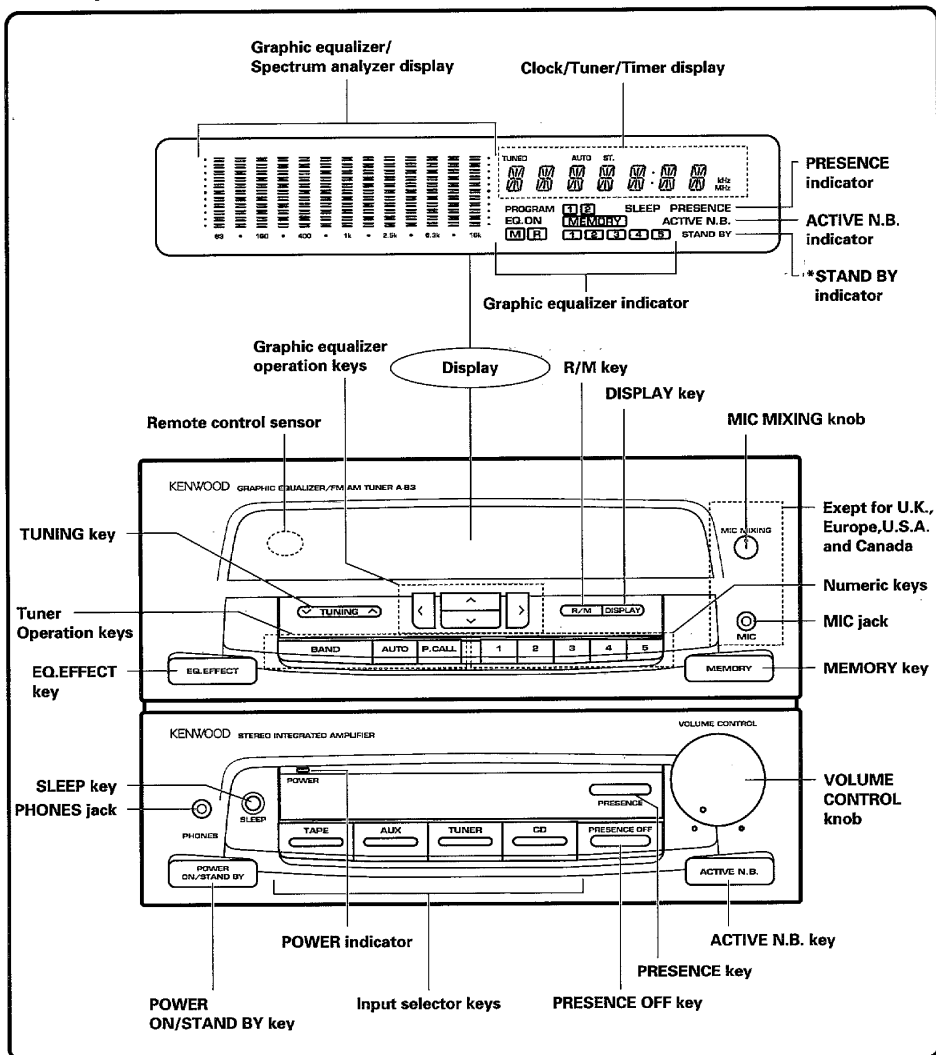
* The P-100 analog turntable is not available in Canada and Australia.

Example: Connection of an LD player



Controls and indicators

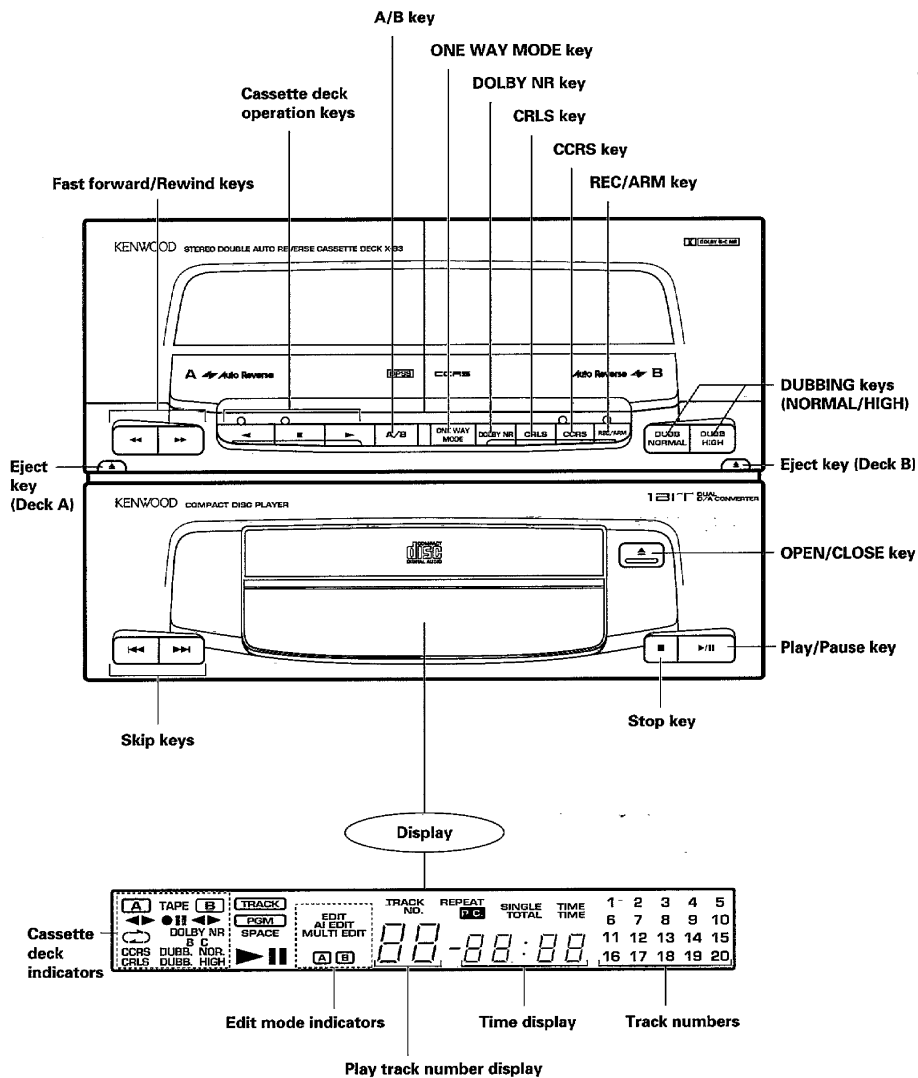
■ Amplifier/Tuner/Graphic equalizer unit



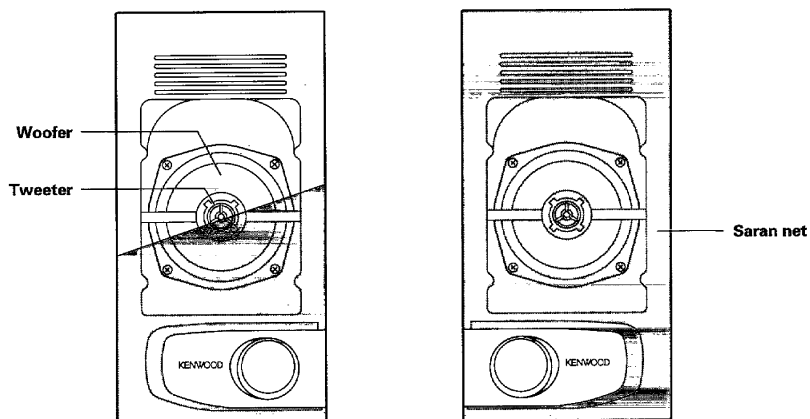
STAND BY mode of POWER switch

When the power cord of this system is plugged into an AC outlet, the display lights up regardless of the ON/OFF setting of the POWER switch. This is because a small amount of current is supplied to display clock and back up memory even while the POWER switch is set to OFF. This mode is referred to as the Stand By mode. While the display is lit, the power of the system can be switched ON/OFF from the remote control unit.

■ CD player/Cassette deck unit



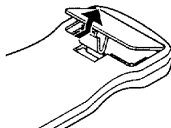
■ Speaker unit



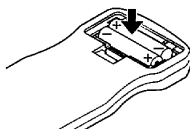
Operation of remote control unit

■ Loading batteries

1 Remove the cover.

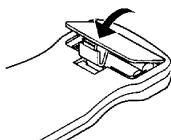


2 Insert batteries.



- Insert two AAA-size (R03) batteries as indicated by the polarity marking.

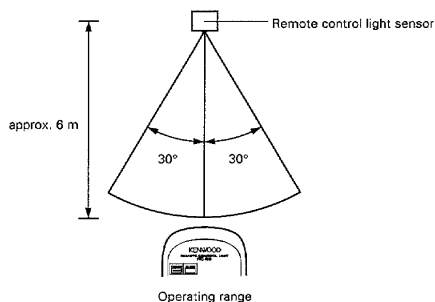
3 Close the cover.



■ Operation procedure

Plug the power cord of the system into an AC wall outlet, and press the POWER key on the remote control unit to turn the power on. When the power is turned on, press the key of the source component to be operated.

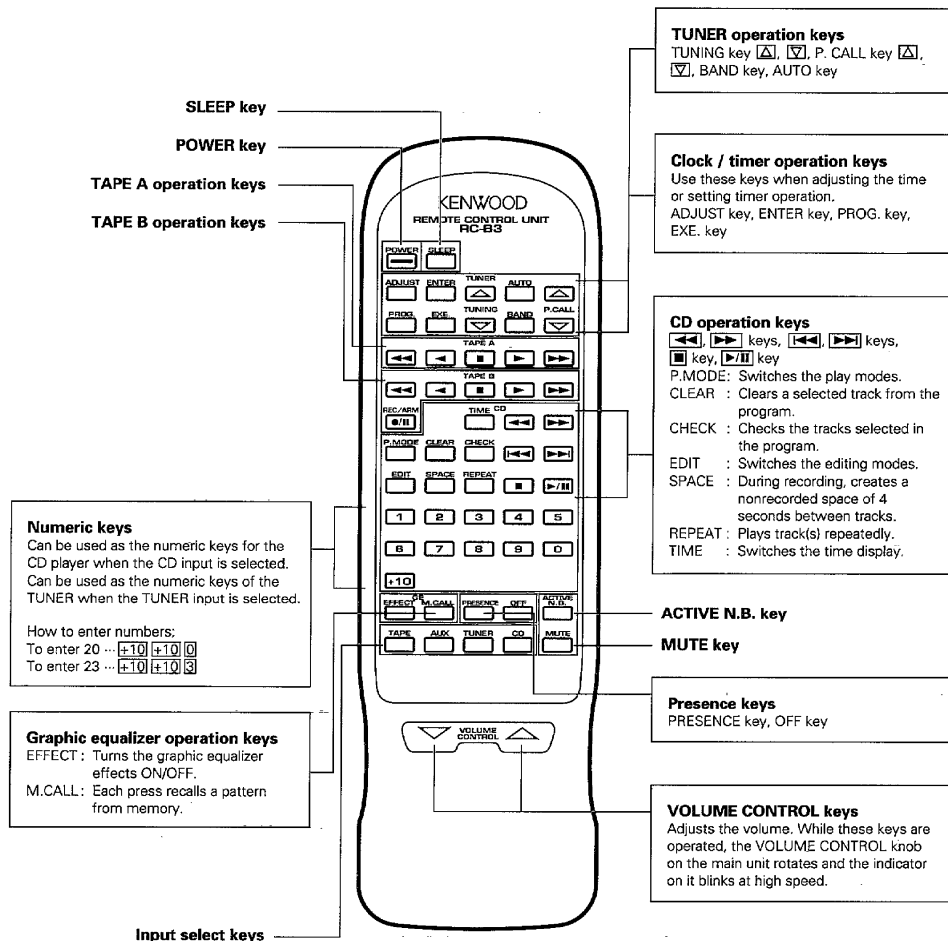
- When two operation keys on the remote control unit are pressed successively, press each key securely reserving an interval of more than 1 second for each press.



Notes:

1. The supplied batteries are intended for use in operation checks. Therefore, their lives may be shorter than ordinary batteries.
2. When the remote-controllable distance gets shorter than before, replace both batteries with new ones.
3. Malfunction may occur if direct sunlight or the light of a high-frequency lighting fluorescent lamp enters the remote control light sensor. In such a case, change the system installation position to prevent the malfunction.

■ Key names and functions

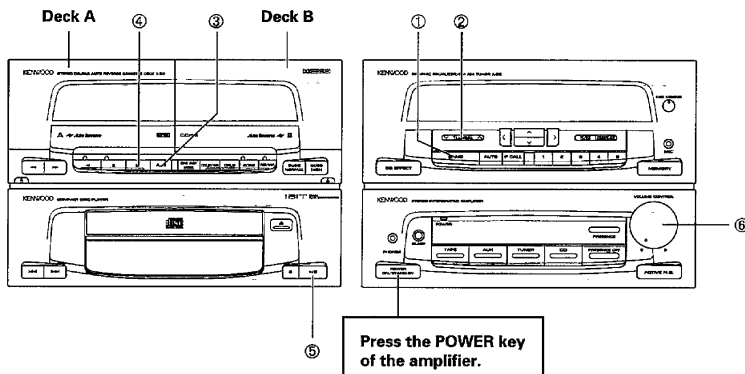


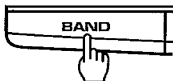
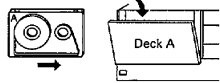
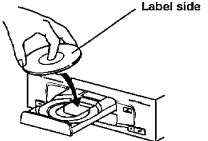
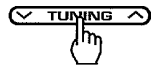
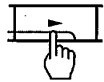
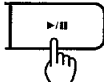
Model Name: RC - B3
 Infrared ray system

Listening to sound

For details, also refer to corresponding pages for each player operations.

For the adjustment of the time displayed on the tuner, please read the next page.



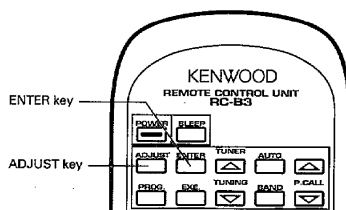
	To listen to a radio broadcast	To listen to a tape	To listen to a CD
1	Select the tuner input. Select a broadcasting band by pressing the BAND key ①. 	① Insert a tape in Deck A.  ② Select Deck A. Press the A/B key ③ to select Deck A. 	Place a CD on the tray. 
2	Select a station. Press the TUNING key ②. 	Play the tape. Press the play key ④. 	Play the CD. Press the play/pause key ⑤. 
3	Adjust the volume.  ● Turn the VOLUME CONTROL ⑥ for an optimum volume.		

Note:

If sound is not output, check the connections described from page 8 again.

Time adjustment

The tuner incorporates the clock function. Adjust the clock to the exact time, especially when the timer function is to be used.



Remote control only

1 Display the clock display.



0:00

- If the POWER switch is not ON (when the POWER indicator is not lighted), start from step 2.

2 Press the ADJUST key.

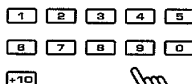


00:00

Blinks.

3 Input the time of the day.

To input 9:05AM : Press 0, 9, 0, 5.
To input 4:50PM : Press 1, 6, 5, 0.



09:05

Use the 24-hour system.

- If you commit a mistake in the input of numeric keys, press the **ADJUST** key, and re-start the input from the beginning.

4 Press the ENTER key.



9:05

- For correct time adjustment, it is recommended to press the **ENTER** key at the same time as a time announcement.

Clock starts to work.

Note:

The time display blinks after a power failure or when the power cord was unplugged from the power outlet. In this case, adjust the time again.

Audio adjustment

Press the **POWER** key of the amplifier.

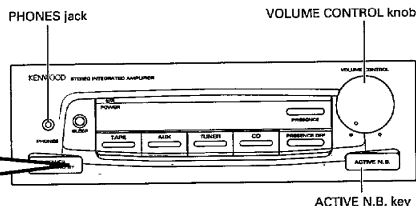
POWER ON/STAND BY



- The **POWER** key on the amplifier can switch on / off the powers of main system.

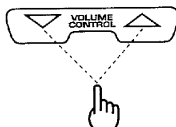
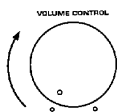


Remote control unit



ACTIVE N.B. key

■ Adjusting the volume



Remote control unit

- When the volume is adjusted from the remote control unit, the point indicator on the **VOLUME CONTROL** knob blinks and rotates together with the control knob.

To mute sound temporarily **Remote control only**



- Pressing the key again resumes the previous volume.

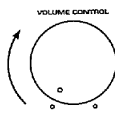
■ Listening through headphones

1 Insert the headphone plug into the headphones jack.



- Sound from all speakers is turned off.

2 Adjust the volume.



Remote control unit

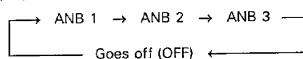
- Be sure to minimize the volume before unplugging the headphone plug.

■ Compensation of bass sound

ACTIVE N.B.



Display:



Each press switches the modes in order.

ACTIVE N.B.: Active Natural Bass Circuit

- The bass compensation mode is switched over every time the key is pressed. Select the desired mode.
- When the **ACTIVE N.B.** key is ON, even if the display is showing the spectrum analyzer display, it changes to the graphic equalizer display whenever the equalizer pattern changes.

ACTIVE N.B. circuit

This circuit selects the optimum amount of bass according to the content of music being played. The circuit functions in the following three modes.

- ① ANB 1: Bass varies automatically every second.
- ② ANB 2: Bass varies automatically every 5 seconds.
- ③ ANB 3: Bass varies automatically every 10 seconds.

ANB 1 is suitable for tunes in which the bass varies at short intervals. Select ANB 2 or ANB 3 as the variation interval lengths. The above description serves only as reference. Please play sound in various modes and select the one that suits your taste best.

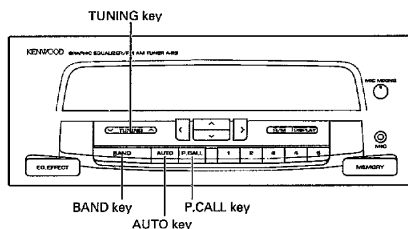
Automatic play operation function associated with input selector keys of amplifier

The automatic play operation allows to start playing the selected input source by simply pressing the input selector key (TAPE, TUNER or CD). It also allows to select a correct input selector key on the amplifier by simply starting playback on the desired input source component.

The same operation is also possible with the input selector keys on the remote control unit.

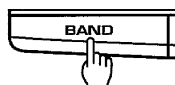
The input source selected at the moment the power is switched ON is the last source (TUNER, CD, etc.) selected before switching the power OFF.

Reception of radio broadcast



■ Receiving broadcast stations and storing them in memory (preset operation)

1 Select the broadcast band.

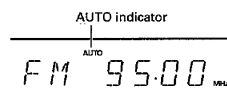


The bands are switched as follows every time the **BAND** key is pressed.

FM → AM (MW → LW)

- The frequency is displayed.

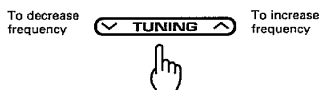
2 Select the tuning mode.



Press the key to select the auto (AUTO lighted) or manual (not lighted) mode.

- Normally, select the auto mode (with AUTO lighted).

3 Tune the desired station.



- The TUNED indicator lights up when a station is received.
- Use manual tuning mode when the radio wave is weak and noisy. At this time, the stereo FM broadcast is received in monaural mode.

Auto tuning mode	Manual tuning mode
Press once. (Tuning stops automatically when a station is received.)	Press repeatedly, or press and hold, until the desired station is received.

4 Store the station in preset memory. **Remote control only**

① Press the ENTER key.



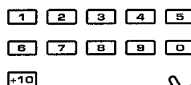
- Proceed to step ② before **MEMORY** stops lighting.

② Press the desired numeric key.

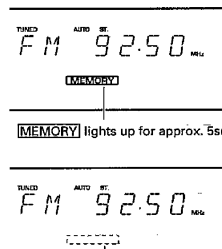
Examples of input

To select preset No. 15: **+10 5**

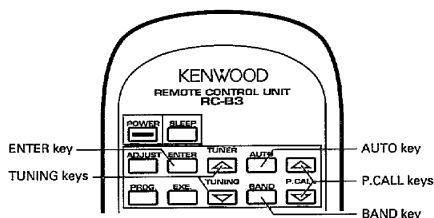
To select preset No. 20: **+10 +10 0**



- When a station has previously been preset under the numeric key pressed, the newly preset station replaces the previous station.
- When preset is to be continued, repeat steps 1 to 4.
- Up to 20 broadcast stations can be preset regardless of the broadcasting bands.



Reception of radio broadcast

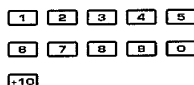


■ Receiving a preset station

Preparation: Select the TUNER input with the amplifier's input selector.

Select the desired station. **Remote control only**

Press the numeric key under which the station is preset.



Examples of input

To select preset No. 15: **+10 5**
To select preset No. 20: **+10 +10 0**

- The frequency of the station received will be displayed.

■ Listening to all preset stations in sequence (PRESET CALL)

Press the P.CALL key.



- On the main unit, each press of the **P.CALL** key receives the preset stations in the order of channels from 1 → 2 ... 19 → 20 → 1 ...
- On the remote control unit, each press of the **UP** key receives the preset stations in the order of 1 → 2 ... 19 → 20 → 1 ..., and each press of the **DOWN** key receives them in the order of 20 → 19 ... 2 → 1 → 20 ...
- When a key is held depressed, the preset stations are received in sequence at 1.0-second intervals. The station being received when the key is released will continue to be received.

Operation of graphic equalizer

The system incorporates a 7-band graphic equalizer. In addition to the facility of storing the graphic equalizer patterns created manually by the user, it also provides 10 factory-preset reference patterns so that the user can select the desired tone from them.

Contents of display

Spectrum analyzer display

Displays the frequency distribution of the source being played to allow understanding at a glance.

The peak value of the varying level of each frequency range is held and displayed for about 0.5 second.

Graphic equalizer display

Shows how each frequency range is compensated.

Even while the display is showing the spectrum analyzer display, it is switched to the graphic equalizer display for a few seconds whenever the following operations are performed.

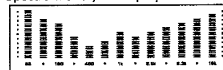
1. Switching power ON.
2. When the equalizer curve changes while the ACTIVE N.B is ON.

DISPLAY

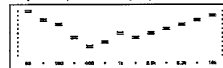


The display mode changes every time the **DISPLAY** key is pressed.

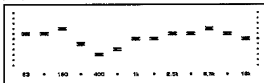
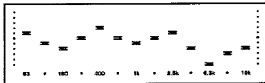
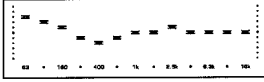
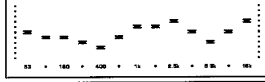
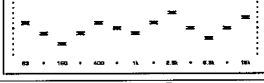
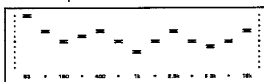
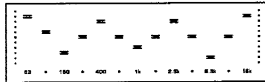
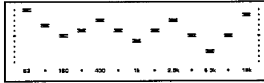
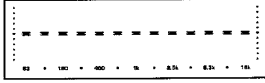
Spectrum analyzer display



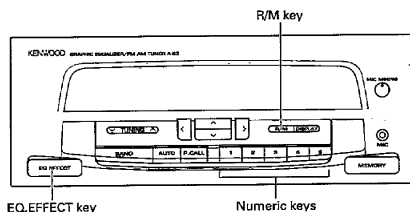
Graphic equalizer display



List of equalizer patterns

REFERENCE mode preset equalizer patterns	MANUAL mode preset equalizer patterns (In the MANUAL mode, the user can also create and store desired patterns under preset keys.)
R1 (Phones) For recording sound by adjusting its sound suitable for playback with a headphone stereo. 	M1 (Soft) Reproduces a soft sound appropriate for background music. 
R2 (Car) For recording sound by adjusting its sound suitable for playback with a car stereo. 	M2 (Clear) Reproduces a clear and bright sound by attenuating the level of low frequencies. 
R3 (Classic clear) Effective for Playing classic orchestra music with boosted mid-high frequencies. 	M3 (Heavy) Effective for Playing rock music or jazz fusion music to reproduce a dynamic sound. 
R4 (Classic heavy) Boosts low frequencies. When a rich bass sound is desired for playing classic orchestra music, use this pattern. 	M4 (Scale) Provides wide and dynamic acoustics. 
R5 (Classic scale) Obtains wide acoustics when playing the classic orchestra music. 	M5 (Flat) For playing sound without any tone equalization. 

Operation of graphic equalizer



■ Operation of MANUAL/REFERENCE feature

This feature allows to recall one of ten preset equalizer patterns in a simple manner.

1 Play a music source.

2 Press the EQ.EFFECT key.

EQ.EFFECT

EQ.ON Lights up.

- Press the **DISPLAY** key when it is required to display the graphic equalizer display.

3 Select an equalizer pattern.

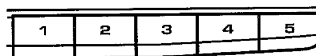
① Set to MANUAL or REFERENCE.

② Press the key for the desired pattern.
(Refer to the equalizer pattern list on page 23.)



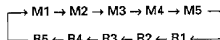
EQ.ON
M R

Only one of them lights up.



Example when "3" is selected
in the MANUAL mode.

Remote-controlled selection is also possible.



Patterns are switched every time the **M.CALL** key is pressed.

EQ.ON
M 3

Example when "4" is selected
in the REFERENCE mode.

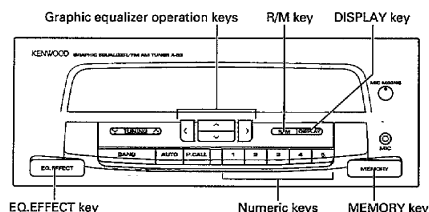
EQ.ON
R 4

To cancel the equalizer effect

EQ.EFFECT

EQ.ON Goes off.

- The pattern being displayed remains the same.

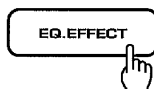


■ How to store desired pattern (M1 ~ M5)

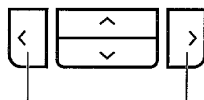
Press the **DISPLAY** key to display the graphic equalizer display.

1 Creation of equalizer patterns

- ① Play a music source and press the **EQ.EFFECT** key.



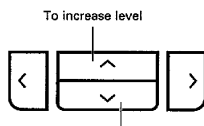
- ② Select the frequency band to be adjusted.



To decrease frequency

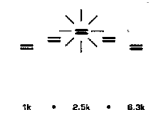
To increase frequency

- ③ Adjust its level.



To increase level

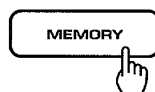
To decrease level



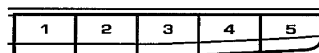
- ④ For each frequency band to be adjusted, repeat steps ② and ③ above.

2 Create a desired equalizer pattern.

- ① Press the **MEMORY** key.



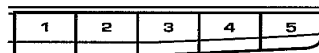
- ② Press one of the preset keys.



Press while **MEMORY** is lighted up.

- Patterns is preset under the number of the numeric key pressed.
- Up to five patterns can be preset in the same manner.
- If you press a preset key which contains a previously stored pattern, the previous pattern is replaced by the new pattern.
- The equalizer pattern cannot be stored while the **ACTIVE N.B** is ON.

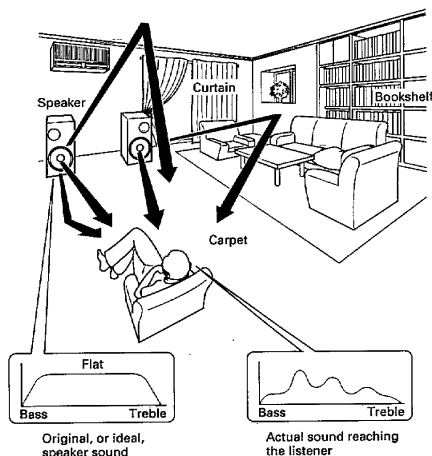
To return to the initial pattern (factory-preset patterns M1 to M5) by clearing the user-preset pattern



After checking that the current mode is the **MANUAL** mode, press and hold the preset key where the pattern to be returned to is preset for more than 5 seconds.

Operation of graphic equalizer

Functions of graphic equalizer



Compensation for the audio characteristics of listening room

The listening room may contain several objects. Some of them reflect sound and some absorb sound, thus the sound reaching your ears is considerably affected by these objects. In such cases, the graphic equalizer can be used to adjust the frequency response of the room for a flat response from low to high frequencies.

- Low frequencies are absorbed by beds, chairs, etc.
- High frequencies are absorbed by curtains, screens, etc.
- The room structure can cause the low frequencies to be unclear, or the sound level to increase or decrease depending on the frequency.

Adjustment of sound to your individual taste

When the reproduced sound contains several musical instruments and voices, the graphic equalizer allows you to enhance or attenuate the sound of specific instruments or voices.

Sound equalization

Super bass range (63 Hz)

When this control is moved up, the bass instrument (double bass, bass drums, or pipe organ, etc.) sound is increased. When the super bass sound is boomy, move this control down.

Bass range (160 Hz)

Usually, the listening room resonance frequency is in this range. To eliminate bass resonance, move this control down.

Mid-bass range (400 Hz)

This range is the basis of music. Whether the sound is rich or not, depends on this range. When the playback sound is not so good, move this control up.

Mid range (1 kHz)

When this control is moved up or down, the baritone or soprano voice is emphasized/de-emphasized. This range is related to the "presence" of music.

Mid-high range (2.5 kHz)

This range is related to stimulus and metallic sound. When this range is well compensated, vivid sound can be obtained.

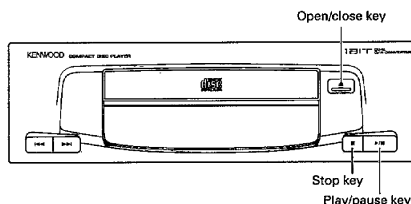
High range (6.3 kHz)

This frequency range is related to the hardness of the sound. When this control is moved up, strings or brass instruments, such as flutes or piccolos, are emphasized. When the control is moved down, the sound will be more soothing.

Super high range (16 kHz)

This frequency range is related to the details of the music. When this control is moved up super high frequency instruments, such as triangles or cymbals, are emphasized, resulting in wide sound and echoes.

Operation of CD player



■ Playing a CD from the beginning (TRACK mode)

1 Select the CD source with the input selector of the amplifier.

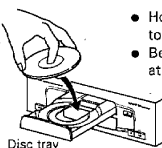
2 Load a CD.

① Open the disc tray.



② Place a disc on the tray.

Label side facing up

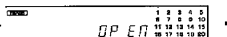


- Hold the disc taking care not to touch the side to be played.
- Be sure to place only one CD at a time.

③ Close the tray.

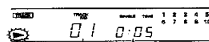
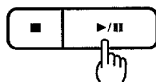


TRACK indicator lights up.



The track Nos. recorded on the CD are display.

3 Start playback.

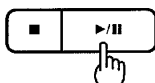


TRACK NO. being played.

Elapsed time from the beginning of track being played.

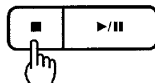
- In a few seconds, playback starts from track No. 1.

To pause CD play



- To resume playback, press the play/pause key again.

To stop CD play

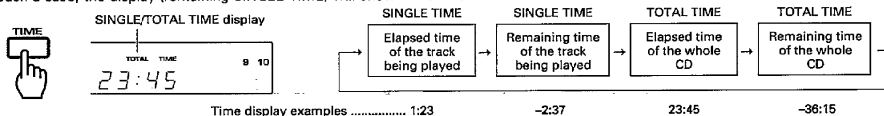


TIME key Remote control only

Press the TIME key when you want to check the elapsed time and remaining time of the track being played. Every time the TIME key is pressed, the displayed time changes as shown below.

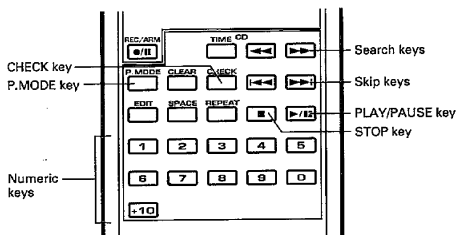
The time information display may not appear when playing a CD containing 44 or more tracks.

In such a case, the display (remaining SINGLE TIME) will show "----".



Operation of CD player

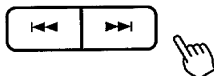
Preparation: Select CD with the input selector key of the amplifier unit



■ Listening from the desired track

Select with the skip key.

Press one of the skip keys according to which direction to skip.



- The tunes are skipped in the direction of the key and the play starts at the beginning of the selected tune.
- When the [REVERSE] key is pressed once during play, the track starts again from the beginning.

Select with the search key.

Remote control only

Press the forward or reverse search key according to the direction to search.



- The fast forward or reverse speed increases as the key is held depressed.
- The track will start to play from where you release the key.

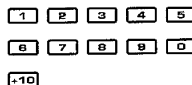
Select with the numeric key.

Remote control only

1 Ensure that the CD player is in the TRACK mode.

- If the [PGM] indicators is lighted, press the [P.MODE] key.

2 Select the desired track.



Examples of input

Track No. 23: [+10] [+10] 3

Track No. 40: [+10] [+10] +10 +10 0

- Play starts from the selected tune and after.

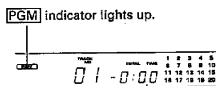
Notes:

1. If a track No. which is not present on the CD is selected while the tray is open, the last track on the CD will be played.
2. Such a selection is not accepted after the tray has been closed or playback has started.

■ Playing desired tracks in desired order (PGM mode) **Remote control only**

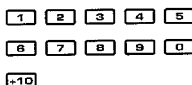
1 Enter the PGM mode.

Press the P. MODE key.



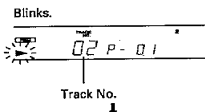
The SINGLE TIME display changes to the TOTAL TIME display.

2 Program desired tracks in desired order.

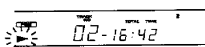


Example

To program track Nos. 2, 5 and 25: **2 5 +10 +10 5**



The number of the selected track in the program (P-No.) is displayed for a few seconds.



The total time of the selected track will be displayed.

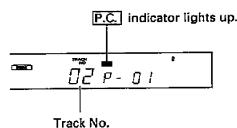
- Up to 20 tunes can be programmed. When the 21 or more tunes are selected, FULL is displayed.
- If you made a mistake, press the **CLEAR** key and select the correct track.
- Tracks can also be programmed by reading the disc label while the disc tray is open.
- If a tune number larger than 43 (44 and subsequent) is selected, the remaining time of the whole CD will not be displayed.

3 Start playback.



- Tracks are played in the order they are programmed (P-No.).
- If one of the skip keys (**▶▶** or **◀◀**) is pressed during programmed playback, the track being played is skipped in the forward or reverse direction.

To check the programmed order



- Every time the **CHECK** key is pressed, the track No. and the order it was programmed (P-No.) are displayed in the order of programming.
- The previous display will resume in a few seconds.

To resume normal playback



- The playback in the order of the track Nos. on CD will start after the track being played.

To stop programmed playback



Main unit

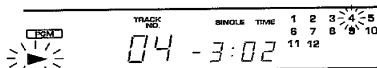


Remote control unit

To check the time of each track on the disc

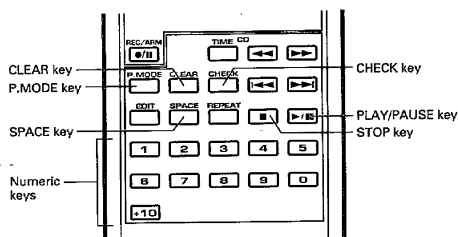
In the program mode, when the disc is stopped, the time of each track on the disc can be checked by pressing the skip keys **▶▶** or **◀◀**.

- The previous display will resume in a few seconds.



Operation of CD player

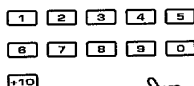
Preparation: Select CD with the input selector key of the amplifier unit



■ To add a track to the program

Press the key(s) for the track No. to be added.

Remote control only



■ To clear tracks from the program

Clearing from the last track

Remote control only

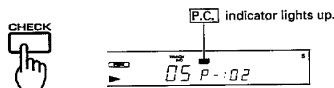


- Every time the key is pressed, tracks are cleared from the last track in order.

■ To change a track in the program

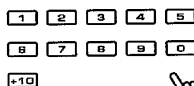
Remote control only

1 Press the CHECK key.



Press until the P.No. to be changed is displayed.

2 Press the key(s) to input the track No. to replace the previous one.



Press while the P.C. indicator is lighted.

- The track being played cannot be changed.

Clearing the whole of program

or



Remote control unit



Main unit

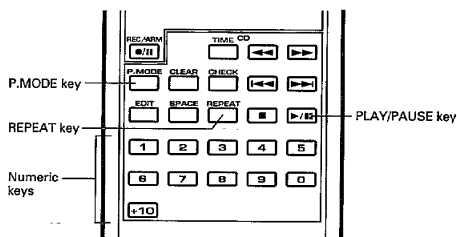
Auto-Space function **Remote control only**

During playback in the program mode, when the **SPACE** key is pressed, a space of about 4 seconds is reserved automatically between the programmed tracks. This function is provided to facilitate the DPSS function of the cassette deck. However, such a space could also be reserved in case the sound of two tracks are continued for example with some classic music and live recordings.



- The total time is displayed including the time of the space.
- To cancel Auto-Space function, press the **SPACE** key again.

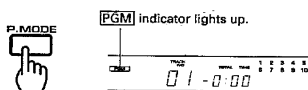
Preparation: Select CD with the input selector key of the amplifier unit



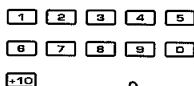
■ Repeated playback Remote control only

Repeated playback of programmed tracks

1 Enter the PGM mode.

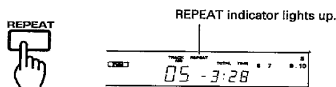


2 Select the desired track(s).



- All of the selected tracks will be played repeatedly.
- If only one track is selected, that track will be played repeatedly.

3 Press the REPEAT key.

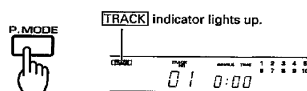


4 Start playback.

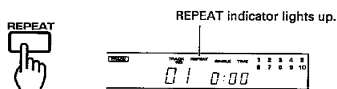


Repeated playback of the whole CD

1 Enter the TRACK mode.



2 Press the REPEAT key.



3 Start playback.

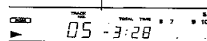


To resume normal playback

Press the REPEAT key again.



REPEAT indicator goes off.



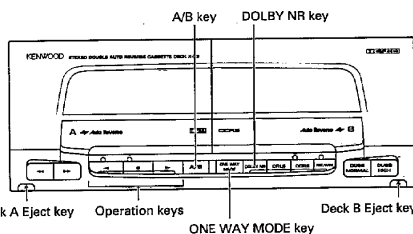
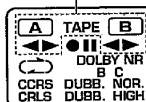
- The playback will be resumed under the CD player mode set before the repeat.

Playback operation of cassette decks

A/B switch key

Every time the key is pressed, the functions of the operation keys can be switched between deck A and deck B.

TAPE A/B indicators

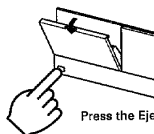


To playback a tape

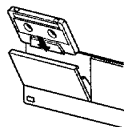
1 Insert a cassette tape.



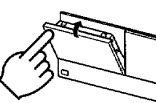
Select deck A or deck B.



Press the Eject key.



Close securely by pressing upper outside.



- The type of tape, Normal, Chrome or Metal, is detected and set automatically.
- Be sure to remove tape slack before insertion.

2 Determine the playback conditions.

① Select the playback mode.



..... To play both sides endlessly.
..... To stop after playing one side of tape.

The indication changes every time the key is pressed.

② Select the Dolby NR mode.

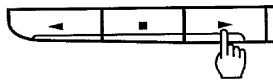


Select according to the tape to be played.

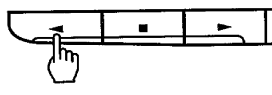
DOLBY NR [B] → [C]
Goes off (OFF) ←

The indication changes every time the key is pressed.

3 Start playback.

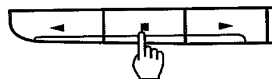


or



To stop playback

- Do not press the Eject key until the tape has stopped completely.



Dolby noise reduction system

The Dolby noise reduction system was developed to reduce the tape hiss noise generated during playback.

The optimum effect of the Dolby NR system is obtained when the same type NR system is used for both recording and playback. If a different type NR system is used, playback is not performed correctly. Make sure that the same type noise reduction system is used for both recording and playback.

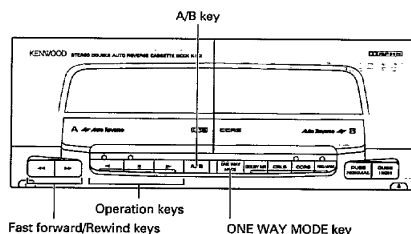
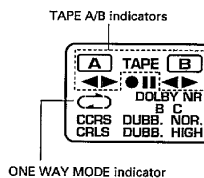
Dolby B NR:

The most popular noise reduction system used in home audio components. Usually, Dolby NR system corresponds to B NR.

Dolby C NR:

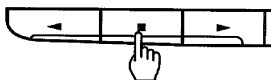
Dolby C NR offers improved noise reduction performance over that of the Dolby B NR. It features a superior noise reduction effect. Use Dolby C NR to record or playback with this unit.

It is recommended that tapes recorded with the Dolby NR system be marked "B" or "C", so that they can easily be distinguished.

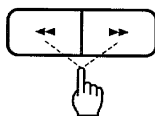


■ To wind the tape at high speed

1 Stop playback.



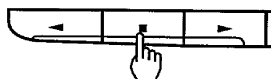
2 Press the ◀◀ key or ▶▶ key.



◀◀: Fast tape winding in the ◀ direction

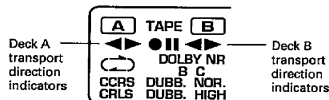
▶▶: Fast tape winding in the ▶ direction

To stop fast tape winding



Tape transport direction indicators

The direction in which tape is transported during playback or recording is indicated by the lighting of one of the indicators ◀ and ▶. The direction selected when the tape was stopped the last time is maintained even after the power is turned off. When the tape is started automatically by the automatic play operation, etc., the transport starts with the direction shown by the direction indicator. If you want to change the transport direction for the next time the power is turned on, press the play key of the opposite direction before turning power off.



■ Relay playback

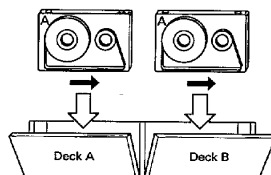
This function plays back the tapes in both decks A and B continuously and repeatedly.

1 Insert tapes.

① Select Deck A or Deck B.



② Insert tapes.



- Tapes are played in the directions indicated by their respective indicators.

2 Select the playback mode.



◀ ... Relay playback of only one side of tapes in decks A and B is repeated.

- Relay playback cannot be performed if the ONE WAY MODE is set to "◀".

3 Start playback.

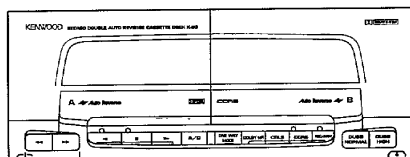
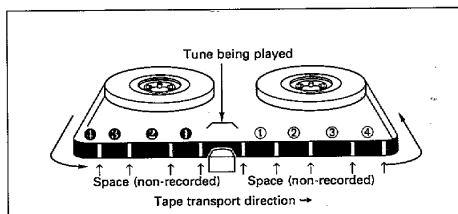


- Relay playback starts from the deck which has been selected with the [A/B] key.

DPSS operation

The DPSS (Direct Program Search System) enables the following convenient operations according to the instructions of the operation keys (these operation are however not available on both decks simultaneously). The DPSS functions are based on the detection of non-recorded spaces of 4 seconds or more between tunes.

1. Skip play : By specifying a tune located several tunes beyond (or behind) the tune being played, skips tunes between the current tune and the selected tune and starts playback from the beginning of the selected tune. Up to 16 tunes can be skipped in Skip Search.
2. Single-tune repeated playback : One single tune is played back repeatedly up to 16 times.
3. Rewind & Play : Rewinds the tape to the beginning and starts playback from there.
4. Dash & Play : If a non-recorded space of more than 10 seconds is detected during playback, that space will be skipped by fast forward tape winding.

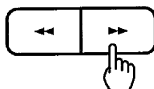


Fast forward/Rewind keys

■ Skip play operation

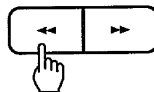
The example below shows the case in which the direction indicated by the tape transport direction indicator is ►. If the direction indicated by the tape direction indicator is ◀, always press the keys for the opposite directions to those shown in the illustrations below.

To play a tune located immediately after the tune being played



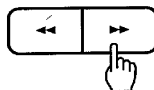
Press once during the playback.

To play the tune being played from the beginning



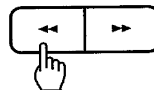
Press once during the playback.

To play a tune located 4 tunes beyond



Press 4 times during the playback.

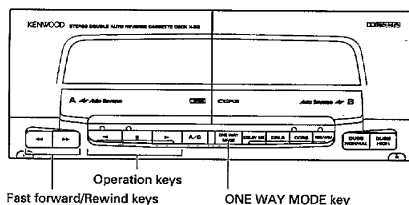
To play the tune located 4 tunes behind



Press 5 times during the playback.

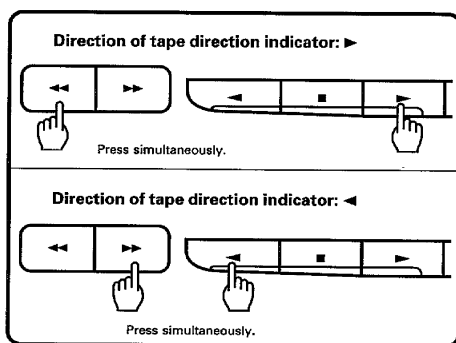
The DPSS will not function properly with the following types of tapes.

- Tapes containing spaces of 4 seconds or more, such as conversations and speeches.
- Tape containing extremely low levels or non-recorded spaces in the middle of tunes, such as classical music.
- Tapes containing recording of large noise between tunes.
- Tapes containing spaces of less than 4 seconds between tunes.
- Tapes recorded with low recording level.
- Tapes recorded using Cross-fade recording.



■ Rewind & Play operation

This operation is not available from the remote control unit.

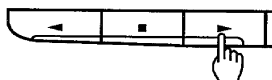


■ Single-tune repeated playback operation

1 Play the tune to be repeated.

2 Press the play key of the same direction as the current tape transport direction.

When direction of tape direction indicator is: ►



- Normal playback resumes after repeating the same tune for 16 times.

■ Dash & Play operation

The Dash & Play skips long non-recorded spaces automatically as the tape is played.

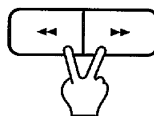
This operation is not available from the remote control unit.

1 Determine the playback mode (conditions).

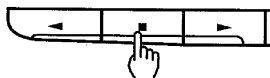


- ◄ ...Two sides are repeated 8 times, after which playback stops.
- ...One side is repeated 8 times, after which playback stops.

2 Press the ◄◄ and ►► keys simultaneously.

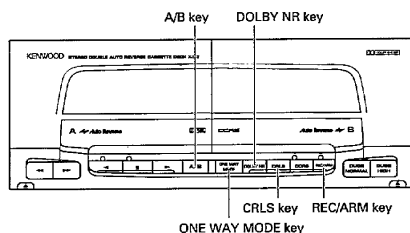
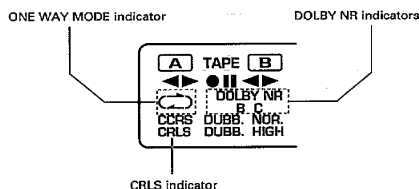


To cancel the playback above in the middle



- Playback is stopped.

Recording operation on cassette deck (Deck B only)



Ordinary recording

Since this unit is not designed for use with metal tapes, recording on metal tapes cannot be carried out.

1 Set up the cassette deck.

- 1 Insert a tape in Deck B.

- 2 Select deck B.



- 3 Set the tape transport direction.

- 4 Select one-side or two-side recording.



Two-side recording
One-side recording

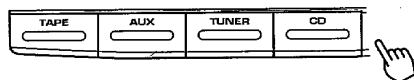
- 5 Select the Dolby NR mode.



DOLBY NR [ON] → [OFF]
Goes off (OFF)

- When the microphone is not to be used, be sure to set the MIC MIXING control fully counterclockwise.

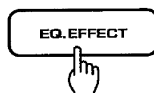
2 Select the source to be recorded.



Select a music source other than TAPE.

To apply the equalizer effect

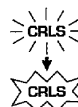
Press the EQ.EFFECT key to ON, and select the desired pattern.



3 Set the recording level.

- 1 Play a music source.

- 2 Press the CRLS key.



Level adjustment completes in about 20 seconds. Wait until the indicator lights steadily.

- The deck enters the record-pause mode.
- If you press the Record key while the indicator is blinking, the recorded sound may distort.
- When the [CRLS] key is pressed while the indicator is blinking, the level adjustment is terminated at that moment and the deck enters the record-pause mode.
- The recording level setting is suspended if the sound of source is not input within about 3 second after the [CRLS] key has been pressed.

4 Start recording.

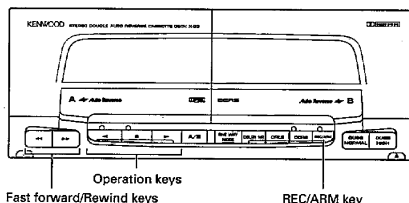
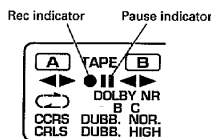
- 1 Play the music source from the beginning.

- 2 Press the REC/ARM key.



Press once.

- Recording will start.
- The deck enters the stop mode automatically when the tape has been recorded till the end.



■ To pause recording temporarily

- A non-recorded space of about 4 seconds is reserved on tape, then the tape transport stops.

To resume recording

■ To stop recording

1

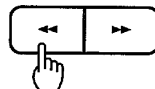
2 Stop playing the source component.

■ To re-start recording after mistake

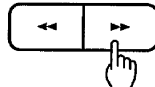
The following procedure is useful when you want to cancel recording in progress and restart it. A non-recorded space of about 4 seconds or more should be reserved before the position where recording was started.

1 Stop recording and rewind tape.

During recording in the ► direction:



During recording in the ◀ direction:



- The recording is aborted, the tape is rewound to the beginning of the tune being recorded, and the deck enters the stop mode after leaving a non-recorded space of about 2 seconds from the end of the previous tune.

2 Re-start recording.

① Press the REC/ARM key twice.



- A non-recorded space of about 4 seconds is reserved on tape, then the tape transport stops.

② Press the REC/ARM key once.



- Recording starts.

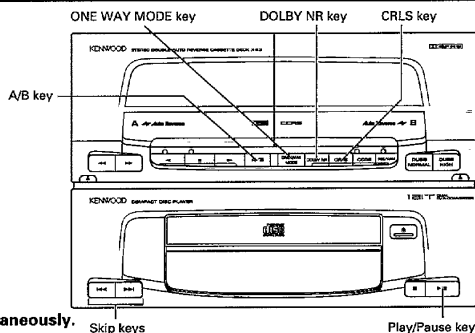
CRLS

CRLS (Computer-controlled Recording Level System):

This function sets the optimum recording level automatically based on the sampling of the levels of a musical source for about 20 seconds.

- Even when you do not press the **CRLS** key Recording is performed with the basic recording level. The basic recording level common for all input select keys has been set at the factory.
- The level is stored in memory once it has been set The level determined by the **CRLS** key for each input source (AUX, TUNER, CD) is stored in memory. From the next time, the same level is recalled for the same source and applied for recording even when the **CRLS** key is not pressed.
- To re-use the previous level after having pressed the **CRLS** key Press the Stop key while the CRLS indicator is blinking to re-use the previously-set level.
- When the **CRLS** key is held depressed for more than 3 seconds The indicator blinks at low speed then goes out. At this time, the CRLS level which has been stored for the input source being indicated returns to the basic recording level.

Recording operation on cassette deck (Deck B only)

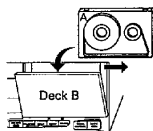


■ Synchro recording of CD

The cassette deck and the CD player can started simultaneously.

1 Set up the cassette deck.

- ① Insert a tape in deck B.



- ② Select deck B.



- ③ Set the tape transport direction.

- ④ Select one-side or two-side recording.



⇄: Two-side recording
→: One-side recording

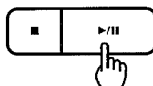
- ⑤ Select the Dolby NR mode.



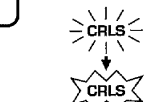
DOLBY NR [ON] → [OFF]
Goes off (OFF) ←

2 Adjust the recording level.

- ① Play a CD.



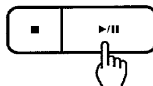
- ② Press the CRLS key.



Level adjustment completes in about 20 seconds. Wait until the indicator lights steadily.

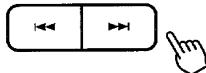
- The deck enters the record-pause mode.

- ③ To pause CD play.



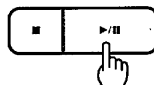
3 Start playing the CD.

- ① Select the tracks to start recording with using the skip keys.



- It can also be selected with the numeric keys of the remote control unit.

- ② Start playback.



- Recording starts at the same time.
- When the CD player has completed playback, the cassette deck stops recording and enters the stop mode.

To pause recording

Press the [Play/Pause] key of the CD player.

To resume recording

Press the [Play/Pause] key of the CD player.

To stop recording

Press the [Stop] key of the CD player.

- When the [Stop] key on the cassette deck is pressed, the cassette deck enters the stop mode, but the playback of CD does not.

Recording of CD playback (CCRS)

The CCRS (Computer-controlled CD Recording System) makes the following convenient recordings possible by setting the optimum recording level for the specific CD to be recorded and starting recording automatically. (CCRS recording is available only with Deck B.)

Recording of TRACK mode playback: CCRS starts recording the CD tracks from the first track in order. When the end of one tape side is reached during recording, fade-out occurs there, and recording is continued on the other side of tape, which starts with fade-in.

Recording of PGM mode playback: CCRS starts recording the programmed CD tracks in the programmed order. When the end of one tape side is reached during recording, the track which should end in the middle is erased, and the recording on the other side of tape is started from the beginning of that track.

Normal EDIT recording: When the recording time of the tape is specified first, the order of the CD tracks are edited so that no track is interrupted at the end of each side of tape. The maximum number of tracks that can be edited is 20. (PRIORITY EDIT: By programming desired turns beforehand, those tunes will be given priority during the editing selection process.)

AI EDIT recording: When the total playing time of a CD exceeds the recording time of tape, all tracks can still be accommodated in the tape by fading out the end of each track. (AI PRIORITY EDIT: By programming desired tunes beforehand, those tunes will be given priority during the editing selection process and will not be fade-out during recording.)

MULTI EDIT recording: Tracks on multiple CDs can be edited and accommodated in a single tape.

Also, refer to "Operation of CD player".

CCRS (Computer-controlled CD Recording System)

When the **CCRS** key is pressed, the following operations occur automatically and recording of CD starts after them.

1. The CD is played and its peak level is sampled from the level used when the disc was recorded.
2. The optimum recording level for that disc is determined from the sampled peak level and the cassette deck is set accordingly.
3. The recording preparations detailed above are completed in about 90*2 seconds, after which actual recording starts.
4. When the recording is completed (when the CD player ends playback or when the tape has been recorded), both the cassette deck and CD player enter the stop mode.

- The set recording level is maintained while the CCRS indicator is lighted.
- The recording level is canceled when the open/close key of the CD player is pressed or the power is turned off.

Display during CCRS operation

Lighting ○ Blinking ☀ OFF ●

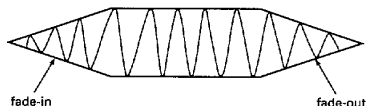
indicator	CCRS *1	Pause	Recording
During recording level setting	☀ Quick blinking	○	○
During recording	☀ Slow blinking	●	○
End of recording	○	●	●

*1. To cancel CCRS setting: Press the open/close key of the CD player.

*2. The setting time is different according to the track number of the CD to be recorded.

Fade-in and fade-out

Fade-in refers to a gradual increase of volume from the minimum to normal level when starting to play music. Inversely, fade-out refers to a gradual decrease of volume from the normal to minimum level at the end of music.



Recording of CD playback (CCRS)

■ Recording of CD playback in TRACK mode

Fade-out and fade-in occur at the end of tape where it is reversed.

1 Select CD with the input selector, and place a CD on the tray.

2 Perform "Ordinary recording" until step 2.

- Refer to page 36.

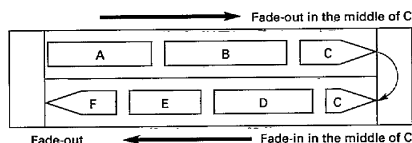
3 Check that the CD player is in the TRACK mode.

- If the **PGM** indicator is lighted up, press the **P.MODE** key. (Remote control unit)

4 Start recording.



- The CCRS is activated so the recording will start in about 90 seconds.
- The tracks on the disc are recorded in the order of the track Nos.
- The operations as shown below occur at the end of tape where it is reversed.



■ Recording of CD playback in PGM mode

Tracks are recorded so that they do not end in the middle at the end of tape.

1 Select CD with the input selector, and place a CD on the tray.

2 Perform "Ordinary recording" until step 2.

- Refer to page 36.

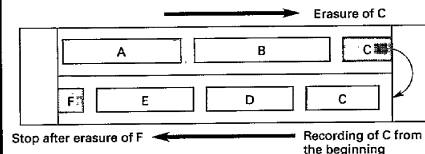
3 In the PGM mode, select the order of tracks to be played.

- Refer to page 29.

4 Start recording.



- The CCRS is activated so the recording will start in about 90 seconds.
- The tracks on the disc are recorded in the programmed order.
- The operations as shown below occur at the end of tape where it is reversed.

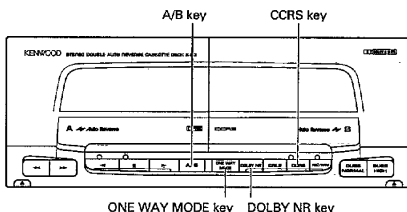


Notes:

1. When the **CCRS** key is pressed during CD playback, the playback is stopped and CCRS setting operation starts.
2. The CCRS recording makes it unnecessary to adjust the recording level manually.
3. The CCRS searches the peak level on a CD in a limited period of about 90 seconds. Therefore, it could happen that the optimum level cannot be adjusted, though it is a very rare case.
4. If the length of a track on the CD is extremely long such as with a classical music, the CCRS cannot be used because the music cannot be fit in one side of tape.
5. When the ONE WAY MODE indicator of the cassette deck is "ONE" the tape end processing occurs only on the A side of tape.
6. When the tune being recorded at the end of the tape is to be faded out, the ending part of the previous tune may also be faded out if the space between the tunes is short.

■ Normal EDIT recording

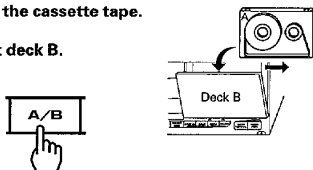
This function allows to edit, base on the recording time of the tape specified, the order of the CD tracks so that no track is interrupted at the end of each side of tape.



1 Set up Deck B ready for recording.

- ① Insert the cassette tape.

- ② Select deck B.

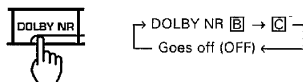


- ③ Check the tape transport direction.

- ④ Select the tape sides to be recorded.



- ⑤ Select the Dolby NR mode.



To apply the equalizer effect

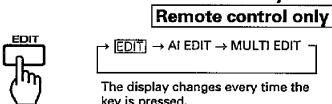
Press the EQ.EFFECT key to ON, and select the desired pattern.

2 Select the CD input.

3 Insert the disc in the CD player.

- When you wish to program tunes, carry out the programming before step 4.
- To use the auto space function (page 30), press the **SPACE** key.

4 Select the EDIT mode with the EDIT key.



- Proceed to the next step within 8 seconds after setting EDIT. If 8 seconds have elapsed, select the EDIT mode again.

5 Input the two-way recording time of the tape.

Use the numeric keys of the remote control unit.

C-30 tape: **+10 +10 +10 0**
C-46 tape: **+10 +10 +10 +10 0**

- 46, 54, 60 or 90 can also be selected every time the **TIME** key is pressed. In this case, press the **EDIT** key again to establish the input.

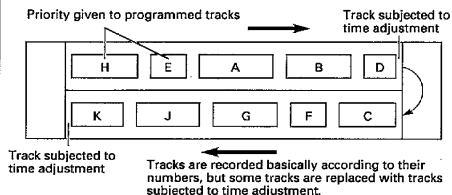
Tracks are edited automatically to fit sides A and B, and the end of editing is indicated when the **EDIT** indicator changes from blinking to continuous lighting.

- If a program containing a few tracks has been programmed previously, these tracks can be recorded in priority.
- When the **EDIT** key is pressed again while EDIT is lighted, "SHUFFLE" appears on the display and re-editing of tracks is performed.

6 Press the CCRS key.



Recording occurs as shown below.



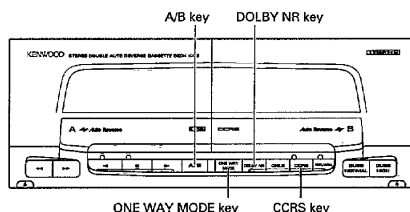
- The CD player and cassette deck enter the stop mode automatically after the completion of recording.

Notes:

- Edit operation does not occur if a track No. 44 or more has been programmed.
- Repeat playback is not available.
- To cancel the auto-spacing, press the **P.MODE** key and re-start the procedure from step 4.

AI EDIT recording

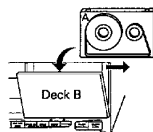
When the total playing time of a CD exceeds the recording time of tape, this function allows to accommodate all tracks in a tape by cutting the end of each track by means of fade-out. It is also possible to specify the important tracks that must not be cut. (AI PRIORITY EDIT)



1 Set up Deck B ready for recording.

- 1 Insert the cassette tape.

- 2 Select deck B.



- 3 Check the tape transport direction.

- 4 Select the tape sides to be recorded.



↔ : Select two-side recording.

- 5 Select the Dolby NR mode.



DOLBY NR ☒ → ☐
Goes off (OFF) ←

To apply the equalizer effect
Press the EQ.EFFECT key to ON, and select the desired pattern.

2 Select the CD input.

3 Insert the disc in the CD player.

4 Select the tracks which must not be cut in recording

- 1 Press the P.MODE key.

- PGM lights up.

- 2 Input the track Nos. using the numeric keys.

- Input several numbers in a desired order.
- For details, refer to "Playing desired tracks in desired order" on page 29.

5 Select the AI EDIT mode with the EDIT key.

Remote control only



EDIT → AI EDIT → MULTI EDIT
The display changes every time the key is pressed.

- Proceed to the next step within 8 seconds after setting AI EDIT. If 8 seconds have elapsed, select the AI EDIT mode again.

6 Input the two-way recording time of the tape.

Use the numeric keys of the remote control unit.

C-30 tape: +10 +10 +10 0

C-46 tape: +10 +10 +10 +10 6

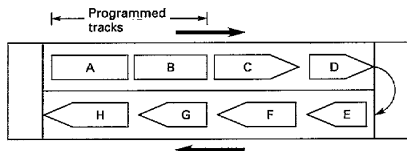
- 46, 54, 60 or 90 can also be selected every time the TIME key is pressed. In this case, press the EDIT key again to establish the input.

Tracks are edited automatically to fit sides A and B, and the end of editing is indicated when the AI EDIT indicator changes from blinking to continuous lighting.

7 Press the CCRS key.



Recording occurs as shown below.



- First, the programmed tracks are recorded without any cutting, the other tracks are recorded with the end of every track cut by fade-out.
- If the tape has enough recording time, all tracks are recorded until the end.
- The CD player and cassette deck enter the stop mode automatically after the completion of recording.

Notes:

- If an extremely-short tape recording time is set, automatic editing may not occur, or the tracks that must not be cut may cut.
- The [SPACE] key and [REPEAT] key functions are inoperative.
- Edit operation does not occur if a track No. 44 or more has been programmed.

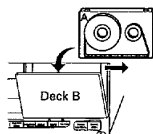
MULTI EDIT (Multiple disc edit) recording

This function allows to edit desired tracks on multiple CDs, each of which containing no more than 20 tracks, and record them on a single tape while replacing discs.

1 Set up Deck B ready for recording.

- ① Insert the cassette tape.

- ② Select deck B.



- ③ Check the tape transport direction.

- ④ Select the tape sides to be recorded.



⇔ Select two-side recording.

- ⑤ Select the Dolby NR mode.



DOLBY NR [ON] → [OFF]
Goes off (OFF) ←

To apply the equalizer effect
Press the EQ.EFFECT key to ON, and select the desired pattern.

2 Select the CD input.

3 Insert the disc in the CD player.

4 Select the MULTI EDIT mode with the EDIT key.

Remote control only



→ EDIT → AI EDIT → MULTI EDIT

The display changes every time the key is pressed.

- Proceed to the next step within 8 seconds after setting MULTI EDIT. If 8 seconds have elapsed, select the MULTI EDIT mode again.

5 Input the two-way recording time of the tape.

Use the numeric keys of the remote control unit.

C-30 tape: [+10] [+10] [+10] [0]

C-46 tape: [+10] [+10] [+10] [+10] [6]

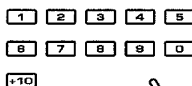
- 46, 54, 60 or 90 can also be selected every time the TIME key is pressed. In this case, press the EDIT key again to establish the input.

MULTI EDIT changes from blinking to continuous lighting, indicating the program input stand-by, and the recordable time of side A is displayed.

6 Start recording.

- ① Select the track to be recorded.

Remote control only

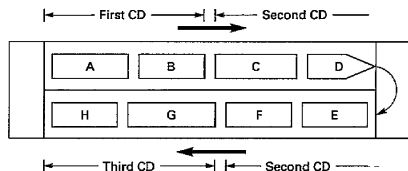


- The TOTAL TIME display shows the remaining time on the tape side A or B.
- When "FULL" appears on the display, this indicates that tracks cannot be recorded any more.

- ② Press the CCRS key.



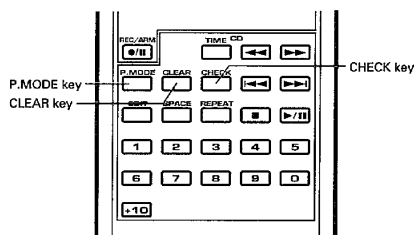
Recording occurs as shown below (example when three CDs are to be recorded).



- When the first CD has been recorded, both the CD player and cassette deck enter the stop mode, and the tray of the CD player opens automatically.
- To record the second and third CDs, repeat step 6 after changing the CDs and closing the tray of the CD player.

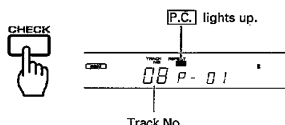
Notes:

- In step 6, the display of the CD player shows FADE and the end of the selected tune which is longer than the preset time is faded out.
- Track No. 44 or more cannot be input.
- The [SPACE] key and [REPEAT] key functions are inoperative.



■ To check the edited contents

Remote control only



- Every time the key is pressed, the track Nos. are displayed in the edited order.
- Only the track Nos. on the disc being present in the CD player are displayed in case of MULTI EDIT.

■ To clear the edited contents

Clearing individual tracks from the last track (MULTI EDIT only) Remote control only



- Every time the key is pressed, the last track in the edited sequence of tracks is cleared.
- Only the track on the disc being present in the CD player can be cleared.

Clearing all edited contents



or



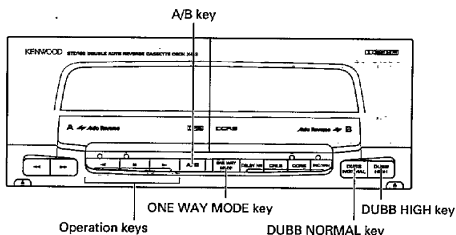
- Only the track on the disc being present in the CD player can be cleared in case of MULTI EDIT.

Tape dubbing

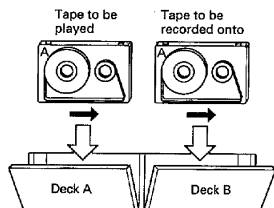
The dubbing refers to the copy of the recorded contents of a tape to another tape (tape in Deck A → tape in Deck B).

Normal-speed dubbing: Copy at normal tape speed.

High-speed dubbing: Copy at double the normal speed.



1 Insert tapes in the cassette decks.



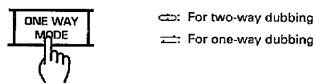
2 Select deck B.



3 Set the same tape transport direction for both tapes.

- Refer to page 33.

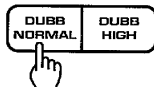
4 Select one-way or two-way dubbing mode.



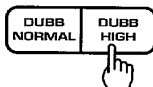
Each press switches the modes.

5 Start dubbing.

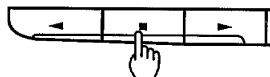
For normal-speed dubbing



For high-speed dubbing



To stop dubbing



- Both Decks A and B enter the stop mode.

To pause dubbing

Normal-speed dubbing: Press the DUBB NORMAL key.

High-speed dubbing: Press the DUBB HIGH key.

- Only deck B enters the record-pause mode after leaving a non-recorded space of about 4 seconds in case of normal-speed dubbing, or about 6 seconds in case of high-speed dubbing.
- To skip tunes you do not want to dub on another tape during dubbing, press the [▶▶] key of Deck A.
- To resume dubbing after pause, press the same DUBBING key as above ([NORMAL] or [HIGH]) again.

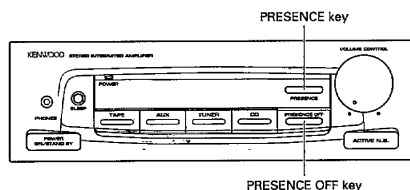
Notes:

- The recording level cannot be adjusted for dubbing.
- The [DOLBY NR] key does not function during dubbing.
 - * The tape recorded by dubbing features the same NR system as the original tape in Deck A.
- Noise from TV may interfere with dubbed sound if high-speed dubbing is executed near a TV set. To prevent this, install the system farther from the TV set.
- If the original tape was recorded at a high level, the sound quality may be degraded if high-speed dubbing is used. In such a case, use normal-speed dubbing.

Presence effect

The presence effect reproduces the atmosphere of presence that surrounds the audience in concert halls and theaters.

The equalizer curve suited for one of the four presence sound field modes is set automatically for an enhanced presence effect.



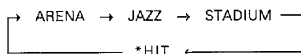
■ Playback with presence effect

1 Play music.

2 Select the presence mode.



The modes changes every time the **PRESENCE** key is pressed.



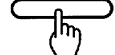
*Except for U.K., Europe, U.S.A. and Canada

- The effect of presence modes may not be noticeable clearly with some music sources.

3 Adjust the volume.

■ To cancel presence mode

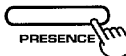
PRESENCE OFF



- Be sure to turn the presence mode OFF when the presence effect is not required.

■ Recording with presence effect

1 Select the presence mode.



The modes changes every time the **PRESENCE** key is pressed.

2 Play music and record it.

- Set the recording level using the CRLS and CCRS.

Types and results of presence modes

ARENA	Reproduces the atmosphere of a large hall with many reverberations.
JAZZ (JAZZ CLUB)	Reproduces the atmosphere of a live music house where vocals and saxes sound well.
STADIUM	Reproduces the atmosphere of a stadium where sounds expand well.
HIT (HIT MASTER)	Reduces the vocal part of CD song, etc., so that the accompaniment can be used in karaoke singing-along. (Except for U.K., Europe, U.S.A., and Canada)

Simple Karaoke singing entertainment

HIT MASTER:

This key allows to reduce the vocal level of songs played on CD, etc., so that you can sing along with only the accompaniment just like in "Karaoke" singing. This feature is convenient when you want to master a latest song the "Karaoke" backing of which is not available.

Except for U.K., Europe, U.S.A., and Canada

Microphone mixing

- 1 Turn the MIC MIXING control fully counter-clockwise.



- 2 Insert the microphone plug into the MIC jack.



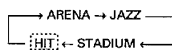
- 3 Adjust the volume balance between the microphone and source.



Singing "Karaoke"

- 1 Play the music source.

- 2 Press the PRESENCE key to select HIT.

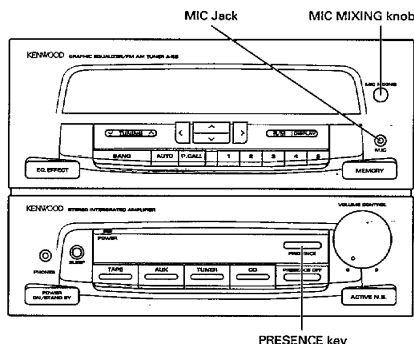


The mode changes every time the key is pressed.

- Only the vocal part level is reduced from the music source. However, note that this effect cannot be obtained with certain types of sources.

- 3 Sing along with the music.

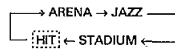
- The overall volume is adjusted with the VOLUME CONTROL.



Recording "Karaoke"

- 1 Connect a microphone.

- 2 Press the PRESENCE key to select HIT.



The mode changes every time the key is pressed.

- 3 Perform the "Ordinary recording" procedure until step 3.

- Refer to page 36.

- 4 Start recording.

- 1 Play a music source.
- 2 Press the REC/ARM key.
- 3 Sing along with the music.

- A "Karaoke" accompaniment tape can also be created by recording music with the MIC MIXING control set fully counter-clockwise.

- 5 Stop recording.

Notes:

1. When the microphone is not to be used, be sure to set the MIC MIXING control fully counterclockwise.
2. The mixture of microphone sound and tape playback sound can not be recorded.

Operation of timer

Be sure to adjust the present time before proceeding the following.

The timer of the system can be used for the following functions.

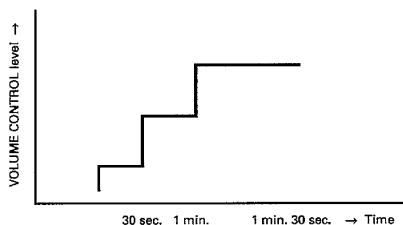
- Program timer** : Receives broadcast, records broadcast or plays tape or CD at the specified ON time, and switches power OFF at the specified OFF time. Up to two timer programs can be set. The AI TIMER functions can be added to the program timer function.
- AI TIMER** : When the power is switched ON at the timer ON time, the volume will increase in three steps, providing a wake-up effect like an alarm clock.
- Sleep timer** : Switches power OFF after a set time period has elapsed. If set before you go to bed, power can be switched OFF automatically even after you fell in sleep.

- For the timer setting procedures, read description on the next page and after.
- The contents of timer programs can be modified as required.
- Even when a timer program has been input, the timer will not be activated unless its execution has been activated.
- Once set, the contents of a program cannot be cleared at once. The previous contents can only be cleared when they are replaced by modification.
- The programs must be set so that their time ranges do not overlap.

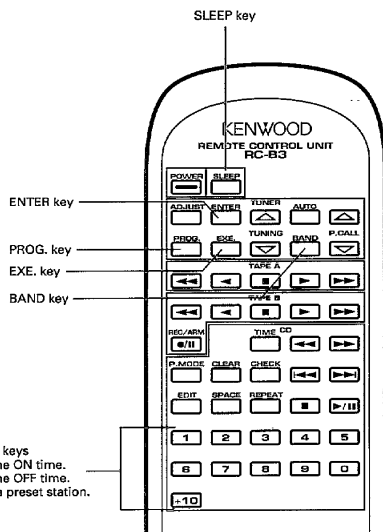
Operation of AI TIMER

With this function, when the power is switched ON by the program timer, the volume increases in three steps.

Reference for volume selection



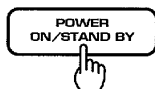
- The VOLUME CONTROL rotates as the volume changes.
- The graphic equalizer curve also varies accordingly.



Be sure to adjust the present time before proceeding the following.

■ Timer reception of radio broadcast Remote control only

1 Switch the power ON.



Main unit



Remote control unit

2 Select the program setting mode.



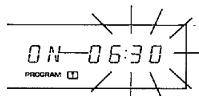
→ PROGRAM 1 → 2 → OFF

The mode changes every time the **PROG.** key is pressed.

Press while the timer program contents are displayed.

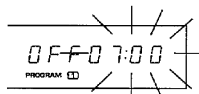
3 Input the ON time with the numeric keys.

6:30 AM: 0 6 3 0

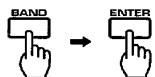


4 Input the OFF time with the numeric keys.

7:00 AM: 0 7 0 0



5 Select the PLAY or AI PLAY mode.

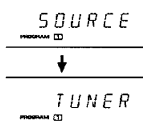
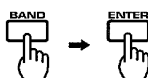


→ PLAY → REC
AI PLAY ←

The mode changes every time the **BAND** key is pressed.

- To increase the volume in three steps when the power is turned ON by the timer, select "AI PLAY".

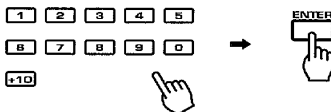
6 Select the TUNER source.



[TUNER] → CD → TAPE → AUX

The sources are switched every time the **BAND** key is pressed.

7 Select the preset key under which the station to be received has been preset.



- The station must be preset previously.

8 Activate the execution of the program.



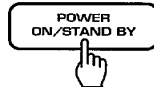
1 → 2 → 10

Each press switches the modes.

- The selected program No. indicator lights up.

9 Adjust the volume and tone.

10 Switch the power OFF.



Main unit



Remote control unit

To continue the reception of radio station which has been started to be received by timer ON.

Press the **EXE.** key before the OFF time comes.

- When the program No. indicator goes off, it means that the program will be received continuously.

Notes:

- When a program has previously been set in the program No. selected in step 2, the newly-set program replaces the previous program.
- Do not operate the **POWER** key while the timer program execution has been activated; otherwise malfunction will occur.

To change the program

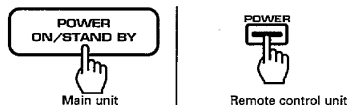
Repeat the programming procedure from step 2.

Operation of timer

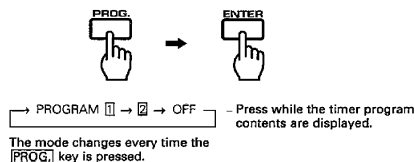
Be sure to adjust the present time before proceeding the following.

■ Timer playback of CD Remote control only

1 Switch the power ON.



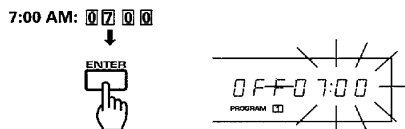
2 Select the program setting mode.



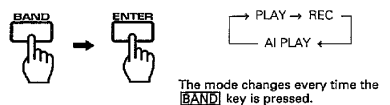
3 Input the ON time with the numeric keys.



4 Input the OFF time with the numeric keys.

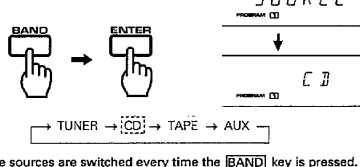


5 Select the PLAY or AI PLAY mode.

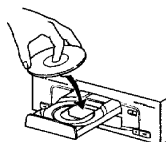


- To increase the volume in three steps when the power is turned ON by the timer, select "AI PLAY".

6 Select the CD source.

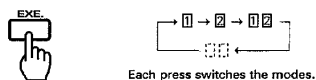


7 Place a disc in the CD player.



- It is not possible to preset a CD playback programs.

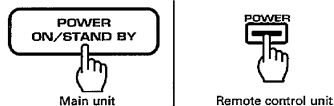
8 Activate the execution of the program.



- The selected program No. indicator lights up.

9 Adjust the volume and tone.

10 Switch the power OFF.



Notes:

- When a program has previously been set in the program No. selected in step 2, the newly-set program replaces the previous program.
- Do not operate the **POWER** key while the timer program execution has been activated; otherwise malfunction will occur.

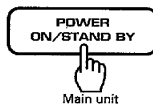
To change the program

Repeat the programming procedure from step 2.

Be sure to adjust the present time before proceeding the following.

■ Timer playback of tape Remote control only

1 Switch the power ON.



2 Select the program setting mode.



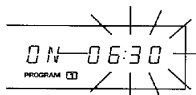
→ PROGRAM 1 → 2 → OFF

The mode changes every time the [PROG.] key is pressed.

Press while the timer program contents are displayed.

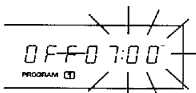
3 Input the ON time with the numeric keys.

6:30 AM: 0 6 3 0

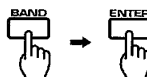


4 Input the OFF time with the numeric keys.

7:00 AM: 0 7 0 0



5 Select the PLAY or AI PLAY mode.

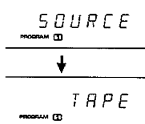
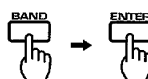


→ PLAY → REC
AI PLAY ←

The mode changes every time the [BAND] key is pressed.

- To increase the volume in three steps when the power is turned ON by the timer, select "AI PLAY".

6 Select the TAPE source.



→ TUNER → CD → [TAPE] → AUX

The sources are switched every time the [BAND] key is pressed.

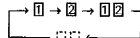
7 Insert a tape and determine the playback condition.

Select the side(s) to be played and the Dolby NR mode.



- Timer playback is possible with either Deck A or Deck B. However, if tapes are placed in decks, playback will begin from Deck B.

8 Activate the execution of the program.

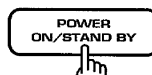


Each press switches the modes.

- The selected program No. indicator lights up.

9 Adjust the volume and tone.

10 Switch the power OFF.



To change the program

Repeat the programming procedure from step 2.

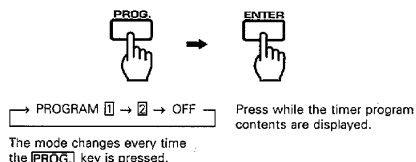
Notes:

- When a program has previously been set in the program No. selected in step 2, the newly-set program replaces the previous program.
- Do not operate the [POWER] key while the timer program execution has been activated; otherwise malfunction will occur.

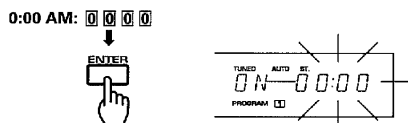
■ Timer recording of radio broadcast Remote control only

1 Switch the power ON and receive a station to be recorded.

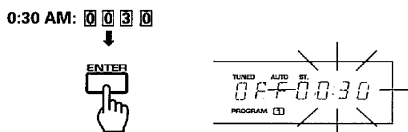
2 Select the program setting mode.



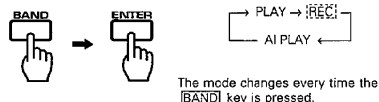
3 Input the ON time with the numeric keys.



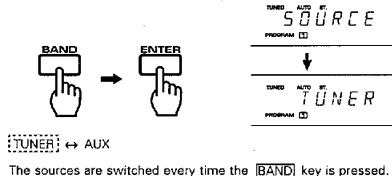
4 Input the OFF time with the numeric keys.



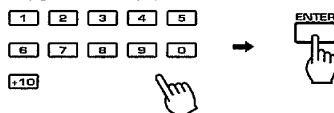
5 Select the REC mode.



6 Select the TUNER source.



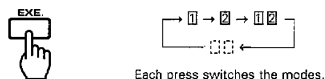
7 Select the preset key under which the station to be received has been preset.



8 Set up the cassette deck ready for recording.

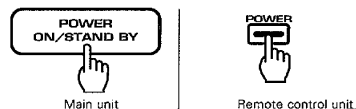
- ① Insert a tape in Deck B.
- ② Set the tape transport direction.
- ③ Select the side(s) to be recorded onto.
- ④ Select the Dolby NR mode.
- ⑤ Set the input selector to TUNER.
- ⑥ Press the CRLS key.

9 Activate the execution of the program.



- The selected program No. indicator lights up.

10 Switch the power OFF.



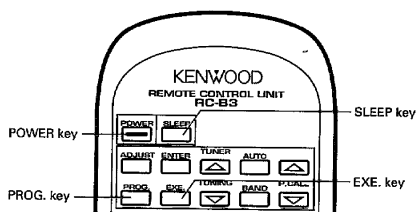
Notes:

1. When a program has previously been set in the program No. selected in step 2, the newly-set program replaces the previous program.
2. When the power is turned ON by the timer, the volume level is automatically set to the lowest level.
3. Do not operate the [POWER] key while the timer program execution has been activated; otherwise malfunction will occur.

To change the program

Repeat the programming procedure from step 2.

Be sure to adjust the present time before proceeding the following.



■ To check timer program contents

Remote control only

Select the timer program No. to be checked.



→ PROGRAM 1 → 2 → OFF

The mode changes every time the **PROG.** key is pressed.

- When a program is selected, its contents will be displayed for about 3 seconds, and the previous display resumes after it.

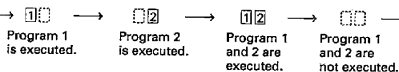
■ To cancel timer program execution

Remote control only

Extinguish the timer program No. which is not to be executed



Each press switches the modes as shown below.



- The program contents are not cleared even when its execution is canceled.

Re-activation of timer execution after canceling it

Since the program itself is retained in memory, check its contents and perform the operation from the step "Activate the execution of the program" as follows.

- Press the **EXE.** key so that the timer program to be executed is displayed
- Adjust the volume and tone in case of timer reception of broadcast or timer playback of CD or tape.
- Switch the power OFF.

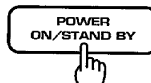
■ Operation of sleep timer

Remote control only

The sleep timer allows to turn the system power off after the specified period has elapsed. This function may be most convenient when you like to fall in sleep while listening to music.

The period can be set up to 90 minutes in 10-minute steps. The sleep timer is applied in priority over other timer programs.

1 Switch the power ON.



Main unit



Remote control unit

2 Specify the period after which the power is to be switched OFF.

Press the **SLEEP** key.

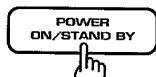


→ 90 → 80 → 70 → → 20 → 10 → Canceled

- Each press decreases the period by 10 minutes.

To cancel sleep timer

Press the **SLEEP** key until the sleep timer is canceled,
or
Switch the power OFF.



In case of difficulty

What appears to be a malfunction may not always be serious. If your unit should not perform as expected, consult the table below to see if the problem can be corrected before seeking help from your dealer or service representative.

Remote control unit

Symptom	Cause	Remedy
Remote control operation is not possible.	- Batteries are exhausted. - The parallel cord is not connected properly. - The remote control unit is too far away from the main system, controlling angle is too large, or there is an obstacle in between. - The source component to be operated does not contain the tape(s) or CD. - An attempt is made to play a tape which is being recorded in the cassette deck.	- Replace with new batteries. - Connect properly referring to "System connections". - Operate the remote control unit within the controllable range. - Place the tape(s) or CD in the source component to be played. - Wait until the recording is completed.

Amplifier, Graphic equalizer, tuner, speakers

Symptom	Cause	Remedy
Sound is not output.	- The speaker cords are disconnected. - The volume is set to minimum position. - The MUTE key of the remote control unit is set to ON and the point indicator is blinking. - The parallel cord is not connected properly. - The headphones plug is left inserted in the PHONES jack.	- Connect properly referring to "System connections". - Adjust the volume to a proper level. - Press the MUTE key to OFF. - Connect properly referring to "System connections". - Remove the plug.
No sound comes out, and "PROTECT" is shown on the display.	Speaker cords are short-circuited.	Turn the power off, eliminate the short-circuiting, then turn on the power again.
Sound is not output from one of the speakers.	The speaker cord is disconnected.	Connect properly referring to "System connection".
Volume is too low.	The equalizer levels are set too low at all frequency ranges.	Increase the levels of the equalizer level control keys.
The clock display is blinking without changing from a certain time.	- There was a power failure. - The power cord was unplugged.	- Set the current time again. - Set the current time again.
The timer does not work.	- The current time is not set, or there was a power failure. - The timer ON time and OFF time have not been set. - The timer execution has not been specified.	- Set the current time referring to "Time adjustment". - Set the timer ON time and OFF time. - Specify execution by pressing the EXEC key.
Radio stations cannot be received.	- No antenna is connected. - The broadcast band is not set properly. - The frequency of the desired station is not tuned.	- Connect an antenna. - Set the broadcast band properly. - Tune the frequency of the desired station.
Interference.	- Noise due to ignition noise of an automobile. - Noise due to an influence from an electric appliance. - Noise due to a nearby TV set.	- Install the outdoor antenna apart from the road. - Turn off the power of the appliance. - Install the system more apart from the TV set.
A station which was preset cannot be received by pressing the corresponding numeric key.	- The preset station belongs to a frequency that cannot be received. - The preset memory was cleared because the power cord had been unplugged for a long period of time.	- Preset a station with a receivable frequency. - Preset the station again.

Cassette decks

Symptom	Cause	Remedy
Sounds is not produced when the Play key is pressed.	- The parallel cord is not connected properly. - The head is dirty. - Tape is irregularly wound and hard to take up. - A non-recorded tape is being played.	- Connect properly referring to "System connections". - Clean the head referring to "Cleaning the head section". - Replace the tape. - Play a recorded tape.
The deck does not work when an operation key is pressed.	- The cassette holder is not closed completely. - The operation key was pressed immediately after closing the cassette holder. - The operation key was pressed within less than 3 seconds after the power was turned on. - Tape is not inserted. - Tape is irregularly wound and hard to take up. - Tape has been fully wound to reel. - The [A/B] key is set in the wrong position.	- Close the cassette holder completely. - Press the desired operation key in a few seconds after closing the cassette holder. - Press the desired operation key in more than 3 seconds after turning the power on. - Insert a tape. - Replace the tape. - Change the tape transport direction or insert the tape inversely. - Press the [A/B] key to select the deck to be operated.
DPSS malfunctions.	The tape is not suitable for DPSS operation, for example the spaces between tunes are too short.	Read "DPSS operation".
CCRS does not work.	- A recordable tape is not inserted in Deck B. - A disc is not placed in the CD player. - The disc is dirty.	- Insert a recordable tape in Deck B and press the [CCRS] key. - Place a disc in the CD player and press the [CCRS] key. - Clean the disc, place it in the CD player, and press the [CCRS] key.
The dubbing on Deck A and Deck B ends at different timing.	This is due to the difference in tape length or to the characteristics of the cassette deck mechanisms.	A small time difference is not regarded as a failure.
The cassette holder does not open when the Eject key is pressed.	The key is pressed during recording or playback.	Press in the Stop mode.
Sound is hoarse, or high frequencies are not audible.	- The head is dirty. - The tape is stretched or wrinkled.	- Clean the head referring to "Cleaning the head section". - Replace the tape.
Sound is distorted.	- The recording level has not been set by the [CRIS] key. - A tape recorded with distorted sound is being played.	- Adjust the recording level referring to "Recording operation on cassette deck". - Replace the tape.
Recording is not initiated when the Recording key is pressed.	- The protection tab on the cassette has been broken. - The cassette holder is not closed completely. - The TAPE input selector is selected on the receiver. - Tape has been fully wound to a reel.	- Use a cassette with unbroken tab or close the hole. - Close the cassette holder completely. - Press the input select key of the source to be recorded. - Change the tape transport direction of Deck B or insert the tape inversely.

In case of difficulty

Symptom	Cause	Remedy
Noise level is high.	- The head is magnetized. - External noise is induced. - A tape recorded with Dolby NR ON is being played with Dolby NR OFF.	- Demagnetize the head referring to "Cleaning the head section". - Install the system apart from other electrical appliances and TV set. - Press the DOLBY NR key to B or C.
Sound is vibrating.	- The capstans or pinch rollers are dirty. - Tape is irregularly wound.	- Clean the head referring to "Cleaning the head section". - Wind the tape regularly by fast forwarding, rewinding or playing it fully from one reel to another.

CD player

Symptom	Cause	Remedy
Disc is loaded, player does not play.	- Disc is loaded upside down. - Disc is loose. - Disc is dirty. - Disc is cracked. - Condensation occurred on the optical lens unit.	- Load the disc again with its label side up. - Insert the disc properly. - Wipe off the dust on the surface of the disc referring to "Disc handling precautions". - Replace the disc with a new one. - Remove condensed dew by referring to "Beware of condensation".
No sound.	- Disc is not loaded. - Play mode is not entered (The play / pause indicator is not lit.) - Disc is too dirty. - Disc is cracked. - The parallel cord is not connected properly.	- Load a disc. - Press the  key. - Wipe off the dust on the disc surface referring to "Disc handling precautions". - Replace the disc with a new one. - Connect properly referring to "System connections".
Music is interrupted. (Sound is skipped.)	- Disc is too dirty. - Disc is cracked. - Oscillation is applied to this unit.	- Wipe off the dust on the disc surface referring to "Disc handling precautions". - Replace the disc with a new one. - Try selecting a place where no strong vibrations occur by changing the installation place, etc.

Notes:

- Since this system uses microcomputers, they may not operate normally due to interfering noise, etc. In such a case, unplug the power cord from the power outlet and, while pressing and holding the **TUNER** input selector key, insert the power cord into the power outlet again. Note that, in this case, the tuner preset channels, graphic equalizer patterns, etc. which have been stored in the unit are cleared.
- Do not use contact cleaners because it could cause a malfunction. Be specially careful against contact cleaners containing oil, for they may deform the plastic components.
- With some tapes, a squeaky noise is produced when the tape is stopped automatically. This is due to the tape protection function, and not a malfunction.
- Do not use 120-minute tapes, for the tape is too thin and gets easily tangled.

Specifications (For U.K. and Europe)

Amplifier / Graphic equalizer / Tuner (A-B3L)

Amplifier

Rated power output

(IEC/NF) From 63 Hz to 12,500 Hz, 0.7% T.H.D.

at 6 Ω 25 W + 25 W

(DIN) 1 kHz, at 6 Ω 28 W + 28 W

Total harmonic distortion at 1/2 rated power

.....0.1% (1 kHz, 6 Ω)

Signal to noise ratio (IHF 66)

AUX 86 dB

Input sensitivity/Impedance

AUX 200 mV / 47 k Ω

Graphic equalizer

Equalizer characteristics variable range ± 10 dB

Individual channel adjust:

63 Hz, 160 Hz, 400 Hz, 1 kHz, 2.5 kHz, 6.3 kHz,

16 kHz

Tuner

(FM)

Tuning frequency range 87.5 MHz ~ 108 MHz

Usable sensitivity (DIN at 75 Ω)

MONO 0.9 μ V / 10.2 dBf

Total harmonic distortion (DIN at 1 kHz)

MONO 0.3% (65.2 dBf input)

STEREO 0.8% (65.2 dBf input)

Signal to noise ratio (DIN weighted at 1 kHz)

MONO 69 dB (65.2 dBf input)

STEREO 62 dB (65.2 dBf input)

Selectivity (DIN ± 300 kHz) 64 dB

Stereo separation (DIN at 1 kHz) 42 dB

Frequency response (30 Hz ~ 15 kHz) + 0.5 dB,

- 3.5 dB

(MW)

Tuning frequency range 531 kHz ~ 1,602 kHz

Usable sensitivity 20 μ V / (600 μ V / m)

Signal to noise ratio 47 dB

(at 30% mod. 1mV input)

(LW)

Tuning frequency range 153 kHz ~ 279 kHz

Usable sensitivity 20 μ V

Signal to noise ratio 43 dB

(at 30% mod. 1mV input)

[General]

Power consumption 100 W

Dimensions W : 270 mm (10-5 / 8")

H : 190 mm (7-1 / 2")

D : 280 mm (11")

Weight (Net) 5.1 kg (11.2 lb)

Cassette deck / CD player (X-B3)

Refer to P. 60

Speakers (LS-B3)

Refer to P. 60

Note:

KENWOOD follows a policy of continuous advancements in development. For this reason specifications may be changed without notice.

Strömbrytarens POWER beredskapsläge

Indikatorn STAND BY tänds efter nätkabelns anslutning till ett vägguttag, oavsett strömbrytarens POWER till/frånslag. Detta anger att en liten mängd ström leds till komponenten som stöd för minnesinnehållet.

Detta läge kallas för beredskapsläget. Strömbrytaren på fjärrkontrollen kan användas för att slå på och av strömmen så länge indikatorn STAND BY lyser.

Virtanäppäimen (POWER) valmiustila (STAND BY)

Kun laitteen verkkajohto on liitetty pistorasiaan, valmiustilan merkivalo syttyy rippumatta virtanäppäimen (POWER) asennosta (ON / OFF). Merkivalo osoittaa, että laitteessa on hieman virtaa muistin sisältöjen ylläpitoa varten. Tätä tilaa kutsutaan valmiustilaksi. Kun valmiustilan merkivalo (STAND BY) palaa, laitteen virta voidaan kytkeä ja katkaista kaukosäätimellä.

Afbrydertastens (POWER) STAND BY funktion

Når apparatets strømledning er tilsluttet en stikkontakt, lyser STAND BY indikator, uanset om der er tændt ved afbryderen på apparatet eller ej. Det angiver, at apparatet bliver forsynet med en ganske lille mængde strøm til opret-holdelse af hukommelsens indhold.

Denne funktion kaldes STAND BY. Når STAND BY indikatoren er tændt, kan strømmen til apparatet slås til og fra med fjernstyringsenheden.

PÅ/AV-knappens Stand-by funksjon

Når strømledningen til dette anlegget er satt i en vekselstrømskontakt, vil STAND-BY indikatorlampen lyse enten PÅ/AV-knappen er på-eller avslått. Dette betyr at en viss mengde strøm tilføres anlegget slik at innholdet i minnet ikke går tapt.

Denne funksjonen kalles Stand-by. Når indikatorlampen for STAND-BY er tent, kan strømmen slås PÅ / AV fra fjernkontrollen.

Specifications (For U.S.A. and Canada)

Amplifier / Graphic equalizer / Tuner

(A-B3)

Amplifier

Rated power output

25 watts per channel minimum RMS, both channels driven, at 6 Ω from 60 Hz to 20,000 Hz with no more than 0.1 % total harmonic distortion (FTC)

Total harmonic distortion at 1/2 rated power

..... 0.1 % (1 kHz, 6 Ω)

Signal to noise ratio (IHF '66)

AUX 86 dB

Input sensitivity/Impedance

AUX 200 mV / 47 k Ω

Graphic equalizer

Equalizer characteristics variable range ± 10 dB

Individual channel adjust:

63 Hz, 160 Hz, 400 Hz, 1 kHz, 2.5 kHz, 6.3 kHz, 16 kHz

Tuner

(FM)

Tuning frequency range 87.5 MHz ~ 108 MHz

Usable sensitivity (MONO at 75 Ω) 1.2 μ V / 13.2 dBf

50dB quieting sensitivity (at 75 Ω)

MONO 1.8 μ V / 16.2 dBf

STEREO 28 μ V / 40.2 dBf

Total harmonic distortion (at 1 kHz)

MONO 0.4 % (65 dBf input)

STEREO 0.5 % (65 dBf input)

Signal to noise ratio (at 1 kHz)

MONO 78 dB (65 dBf input)

STEREO 71 dB (65 dBf input)

74 dB (85 dBf input)

Selectivity (± 400 kHz) 50 dB

Stereo separation (at 1 kHz) 40 dB

Frequency response (30 Hz ~ 15 kHz) ..+ 0.5 dB, -3.5 dB

(AM)

Tuning frequency range 530 kHz ~ 1,700 kHz

Usable sensitivity 16 μ V / (500 μ V / m)

Signal to noise ratio 48 dB

(at 30 % mod. 1mV input)

[General]

Power consumption 100 W

Dimensions W : 270 mm (10-5 / 8")

H : 190 mm (7-1 / 2")

D : 280 mm (11")

Weight (Net) 5.1 kg (11.2 lb)

Cassette deck / CD player (X-B3)

Refer to P. 60

Speakers (LS-B3)

Refer to P. 60

Note:

KENWOOD follows a policy of continuous advancements in development. For this reason specifications may be changed without notice.

For the U.S.A.

Note to CATV system installer:

This reminder is provided to call the CATV system installer's attention to Article 820-40 of the NEC that provides guidelines for proper grounding and, in particular, specifies that the cable ground shall be connected to the grounding system of the building, as close to the point of cable entry as practical.

For the U.S.A.

FCC WARNING

This equipment may generate or use radio frequency energy. Changes or modifications to this equipment may cause harmful interference unless the modifications are expressly approved in the instruction manual. The user could lose the authority to operate this equipment if an unauthorized change or modification is made.

NOTE:

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment may cause harmful interference to radio communications, if it is not installed and used in accordance with the instructions. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio / TV technician for help.

Specifications (For other countries)

Amplifier / Graphic equalizer / Tuner (A-B3)

Amplifier

Rated power output

(EIAJ) 35 W + 35 W (1 kHz, 6 Ω)

(IHF '66) From 60 Hz to 20 kHz, 0.1 % T.H.D.

at 6 Ω 25 W + 25 W

Total harmonic distortion at 1/2 rated power

..... 0.1 % (1 kHz, 6 Ω)

Signal to noise ratio (IHF '66)

AUX 86 dB

Input sensitivity/Impedance

AUX 200 mV / 47 k Ω

MIC 1.2 mV / 47 k Ω

Graphic equalizer

Equalizer characteristics variable range ± 10 dB

Individual channel adjust:

63 Hz, 160 Hz, 400 Hz, 1 kHz, 2.5 kHz, 6.3 kHz,
16 kHz

Tuner

(FM)

Tuning frequency range 87.5 MHz ~ 108 MHz

Usable sensitivity (MONO at 75 Ω) 1.2 μ V / 13.2 dBf

50 dB quieting sensitivity (at 75 Ω)

MONO 1.8 μ V / 16.2 dBf

STEREO 28 μ V / 40.2 dBf

Total harmonic distortion (at 1 kHz)

MONO 0.4 % (65 dBf input)

STEREO 0.5 % (65 dBf input)

Signal to noise ratio (at 1 kHz)

MONO 78 dB (65 dBf input)

STEREO 71 dB (65 dBf input)

74 dB (85 dBf input)

Selectivity (± 400 kHz) 50 dB

Stereo separation (at 1 kHz) 40 dB

Frequency response (30 Hz ~ 15 kHz) ..+ 0.5 dB, -3.5 dB

(AM)

Tuning frequency range

9 kHz step 531 kHz ~ 1,602 kHz

10 kHz step 530 kHz ~ 1,610 kHz

Usable sensitivity 16 μ V / (500 μ V / m)

Signal to noise ratio 48 dB

(at 30 % mod. 1mV input)

[General]

Power consumption 100 W

Dimensions W : 270 mm (10-5 / 8")

H : 190 mm (7-1 / 2")

D : 280 mm (11")

Weight (Net) 5.1 kg (11.2 lb)

Cassette deck / CD player (X-B3)

Refer to P. 60

Speakers (LS-B3)

Refer to P. 60

Note:

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Specifications

Cassette deck / CD player (X-B3)

Cassette deck

Recording system AC bias (Frequency: 105 kHz)

Heads

A deck	Playback head	1
B deck	Playback / recording head	1
	Erasing head	1

Motors

A deck	1
B deck	1

Wow and flutter 0.1 % (W.RMS)

Fast winding time Approx. 110 seconds
(C-60 tape)

Frequency response

Normal tape	30 Hz to 15,000 Hz, ± 3 dB
CrO ₂ tape	30 Hz to 16,000 Hz, ± 3 dB

Signal to noise ratio

Dolby NR OFF	50 dB
(IEC, 250 nWb/m, CrO ₂ tape)	
Dolby NR OFF	53 dB
Dolby B NR ON	63 dB
Dolby C NR ON	72 dB
(3rd H.D. 3%, CrO ₂ tape)	

CD player

Laser Semiconductor laser

Playing rotation 200 rpm ~ 500 rpm (CLV)

Frequency response 20 Hz ~ 20 kHz

Signal to noise ratio More than 90 dB

Total harmonic distortion Less than 0.01 %
(at 1 kHz)

Wow & Flutter Unmeasurable Limit

[General]

Dimensions	W: 270 mm (10-5 / 8")
	H: 190 mm (7-1 / 2")
	D: 257 mm (10-1 / 8")

Weight (Net) 4.1 kg (9.0 lb)

Speakers (LS-B3)

Enclosure	Bass-reflex type
Speaker configuration	2-Way system
Impedance	6 Ω
Maximum input level	50 W
Output sound pressure	88 dB / W, 1m
Frequency response	50 Hz ~ 20 kHz

[General]

Dimensions	W: 190 mm (7-1/2")
	H: 380 mm (14-15/16")
	D: 235 mm (9-1/4")
Weight (net)	4.3 kg (9.5 lb) (1 piece)

Note:

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